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INTERNATIONAL LONGSHOREMEN'S CONVENTION.

Chicago, July 16.—Organization has been the keynote of the annual convention of the International Longshoremen's Association, held here this week. There were no strikes to be considered, and beyond the refusal of the new local union to handle railroad freight, which was being diverted to the Buffalo lake lines on account of the railroad freight handlers' strike in Chicago, no action looking toward a suspension of work has been talked of. It is planned to enlarge the scope of the organization, to include all unorganized men employed by the inland transportation companies, both lake, river and rail, and this includes a change of name. If the action is taken the Longshoremen's national union will be called the International Association of Marine and Transport Workers. The question was set for discussion for Thursday. Four hundred delegates, representing a membership of 125,000 men, were called to order in Washington hall, 70 Adams street, by President Daniel J. Keefe on Monday morning. The morning was devoted to organizing the convention and the report of the committee on credentials. President John J. Mitchell of the United Mine Workers' association made an address in which he declared the great need for organized labor standing together. Some took his remarks to indicate that the longshoremen might be asked to lend their aid to the miners' strike if it cannot be settled otherwise, but this is not probable. President G. W. Perkins of the International Cigar Makers' union also spoke.

On Tuesday Secretary Barter read his annual report. He said that in the past year thirty-six local unions have been organized on the lakes, and work on the Atlantic coast had only just begun. Twenty-two locals have been formed on the coast within the past year, and it was proposed to extend the work from Maine to Florida. On the Pacific coast sixteen locals were formed. As a start, eight organizations were launched on the Gulf of Mexico. On the Canadian water front remarkable progress was reported, fourteen new locals being affiliated.

"Some progress has been made in the way of correspondence looking to the organization of the river ports," the report ran. "The Pool deckhands have been unionized at Pittsburg and this is considered a start toward organizing the river workers. In Porto Rico two locals have been formed and if we are to keep step with the march of progress Porto Rico, Cuba and the Philippines must be organized."

Mr. Barter laid great stress on the matter of organizing the transport workers of the inland cities. He said nine branches of that character had been formed in the last year and many more can be induced to join since a start has been made. It is urged that their affiliation will greatly strengthen the ranks of the marine transport workers.

On Saturday afternoon the freight handlers on the Buffalo line docks withdrew from work and caused the report to become general that they were on a strike. They were at a meeting on the north side, where a new union was formed known as the Marine Package Freight Handlers. They will ask the managers for a scale of 30 cents an hour, time and a half for work done after ten o'clock at night, and double time for Sundays. At present some of the men are paid 30 cents an hour straight, and other lines pay 25 cents. The union has aimed a blow directly at the freight handling system of W. J. Connors, and marine men are watching for the outcome when the scale will become effective on July 26. For nearly ten years the lake lines have been practically free from union restrictions. The organization is aiming to bring in the men on the coal and ore docks and eventually the sale trade. Then the common laborers on the docks are to be asked to come in, so that every dock worker along the river front will be affiliated with the international organization.

Another important feature of the convention is the plan to form an amalgamation between the International Longshoremen's Association and the National Union of Dock Laborers in Great Britain and Ireland, which has over 100,000 members. On Wednesday the delegates rested from their labors and took an excursion down the drainage canal.

MORE ORDERS FOR NEW LAKE SHIPS.

The American Ship Building Co. has just booked an order for its twenty-third vessel—all independent of those which are now on the stocks promised for this year's delivery. The twenty-third vessel is a freight steamer for C. W. Elphicke of Chicago of the following dimensions: Length, 376 ft. over all; keel, 356 ft.; beam 50 ft.; depth, 28 ft. She will have triple-expansion engines with cylinders 20, 33½, and 55-in. in diameter with a stroke of 40-in. Steam will be supplied by two Scotch boilers, 12½ ft. in diameter and 11½ ft. long, fitted with Howden hot draft. She will have a carrying capacity of 5,200 tons on 18 ft. draught and will be named after G. Watson French, vice-president of the Republic Iron & Steel Co. The list of orders now include a car ferry for the Manistique, Marquette & Northern Railway, six cargo steamers for a syndicate headed by Capt. W. W. Brown of Cleveland, ten cargo steamers of Canadian canal dimensions for Capt. A. B. Wolvin's St. Lawrence river-Quebec company, a freighter for H. A. Hawgood of Cleveland, a package freight boat for the Lake Michigan service of the Anchor line, a freight and passenger boat for the Lake Superior service of the Anchor line, two new side-wheel passenger boats for the Detroit & Cleveland Steam Navigation Co. and the freighter for C. W. Elphicke of Chicago. Negotiations for more freighters are under way and it is expected that orders for two or three steamers will be closed within the next week or ten days.

It is announced from Chicago that the hull of the Milwaukee fire boat, for which plans were drawn some time ago by W. J. Wood, will be built by the Ship Owners Dry Dock Co. The engine contract was let several weeks ago. It is said that the price for hull and equipment is $48,995, and that five months is the time allowed for completion, with a forfeit of $250 for each day's delay beyond that time.

ASSETS OF THE STEEL CORPORATION $1,400,291,000.

It has been repeatedly stated in these columns that the principal asset of the United States Steel Corporation was its iron ore holdings in the Lake Superior country. It controls nearly three-quarters of the known deposits of iron ore in that region; it mined last year nearly two-thirds of the output of Lake Superior ores. In a statement of its assets just filed in court the value of these deposits is placed at $700,000,000. We do not know, of course, upon what basis this value is figured, but we should say that it is conservative. A reasonable estimate of known Mesabi ores in the ground would be 1,000,000,000 tons. These deposits are an invaluable asset, because they cannot be duplicated. They are a constantly increasing asset, as the demand for iron and steel expands, because no rival can hope to obtain control of deposits of equal variety and volume.

The statement of assets is filed in answer to the suit brought by J. Aspinwall Hodge, William H. Curtiss and Bernard Smith to prevent the corporation from carrying out its bond conversion plan—a plan which contemplated the transfer of $200,000,000 of 7 per cent. preferred stock into $200,000,000 of 5 per cent. bonds. The management of the corporation is much incensed at this latest suit, claiming that it is being made the victim of an organized effort to depress its stocks. An examination of the books shows that 100 shares of preferred stock were transferred to Hodge in August, 1901, but the corporation declares that it has no knowledge that Hodge is the real owner of the stock. Bernard Smith holds 200 shares of preferred stock and W. H. Curtiss none at all. It does not, therefore, appear that these particular plaintiffs have anything at stake comparable to the investments of the men who actually formed the corporation by turning over their plants to it.

The statement of assets includes 400 producing mills of the value of $300,000,000; seventy-five blast furnaces of the value of $48,000,000; iron and bessemer ore properties of the value of $700,000,000; coal and coke fields (87,589 acres) of the value of $100,000,000; transportation properties, including railroads (1,467 miles), terminals, dock, ships (112), equipment (23,185 cars and 428 locomotives), $80,000,000; natural gas fields, $20,000,000; limestone properties, $4,000,000; cash and cash assets as of June 1, 1902, $148,291,000; total, $1,400,291,000. The corporation's earnings are stated to be at the rate of more than $140,000,000 a year. A saving of $30,000,000 is credited to the ownership of ore properties and it is estimated that the ownership of transportation facilities saves the company $10,000,000 annually. The earnings of the coal and coke properties are stated to be more than $1,000,000 a month. These statements as to values and earnings were presented to disprove a charge of the plaintiffs that Mr. Schwab, the president, and Mr. Trimble, the secretary, made a false certificate when they certified that in their judgment the properties were worth at least the par value of the preferred stock after deducting all indebtedness.

The conversion plan was agreed upon at a stockholders' meeting on May 19. The answer admits that the conversion plan includes a payment of $10,000,000 to J. P. Morgan & Co. It denies that any of the acts contemplated will work fraud or injury to the complainants, but says that on the contrary such acts, when consummated, will be greatly to the benefit of the corporation and of every stockholder. The answer says that some of the directors are members of the syndicate formed by J. P. Morgan & Co. to float bonds, and that that fact was communicated to stockholders in a circular dated April 17, 1902. It is further declared that the directors so interested constitute a minority of the board of directors, that they were individually at the time of the formation of such syndicate, and now are, owners and holders of large amounts of the stock of the defendant corporation, and that they became parties to said syndicate and assumed their proportion of the liability thereof in order to assure the success of the plan of purchasing and retiring the preferred stock, as they believed such plan to be of great value to the defendant corporation and its stockholders. The suit is based on the contention that the corporation's assets do not equal the amount of its preferred stocks, and that therefore it cannot proceed as intended, under the act of 1902. The answer, which is supported by an affidavit of Charles Schwab, states that the assets will amount to more than the entire stock, bonds, common and preferred, or more than $1,400,000,000. Mr. Schwab, in his affidavit, maintains that his position is such as to give him knowledge of the actual worth of the properties, and list his estimates of their value. He says, among other things, that the earnings of the corporation in the fifteen months of its existence have been in excess of 10 per cent. of the entire capital stock.

Mr. Schwab calls attention to the value of $320,000,000 placed on the Carnegie properties, as a result of the Frick litigation. It is set forth also that the fixed charges of the United States Steel Corporation are 5 per cent. per annum on $303,757,000 of bonds and an annual sinking fund of $3,040,000, making an annual charge of $18,227,850; and that when the proposed issue of second mortgage bonds is outstanding, namely, $250,000,000 at 5 per cent., together with an annual sinking fund of $1,010,000, the total fixed charges of the United States Steel Corporation for interest and bond sinking funds will be $31,737,850, to provide which Mr. Schwab says it is now earning at the rate of $140,000,000 per annum net.

"The profits of the United States Steel Corporation," the affidavit continues, "could be reduced more than 75 per cent., and there would still be ample funds to pay the interest and sinking funds upon the first and second mortgage bonds. Instead of a margin of 2 per cent. as intimated in the affidavit of Smith, there is a margin of 75 per cent. before solvency or financial ability of the steel corporation can possibly be questioned."

Other affidavits corroborative of Mr. Schwab's estimate on the company's properties were presented by Elbert H. Gary, chairman of the corporation's executive committee; James Gayley, vice-president; John Birkinbine, consulting engineer and expert in iron and steel matters; Thomas Lynch, president of the H. C. Frick Coke Co.; William Nelson Page, president of the Gayley Mountain Coal Co.; James H. Reed, president of the Pittsburgh, Bessemer & Lake Erie Railroad Co., and Richard Trimble, secretary of the United States Steel Corporation.

RETIRED LIST FOR REVENUE CUTTER SERVICE.

An important act of the last congress, which is now being put into effect, has to do with the revenue cutter service. Hitherto this service has received but little recognition in comparison to the elaborate care which is taken of the navy. The new legislation gives the revenue officers positive rank in peace as well as in war and assimilable with the various grades of the navy. It increases the pay to that of the army, making no difference between sea and shore pay, and it establishes a retired list on three-quarters' pay for all who reach sixty-four years of age or who are incapacitated for active duty by disabilities incident to the service. Hereafter in the cutter service the captains will rank with army majors and navy lieutenant commanders; the first-lieutenants with army captains and navy lieutenants; the second-lieutenants with army first-lieutenants and navy lieutenants, junior grade, and the third-lieutenants with army second-lieutenants and navy ensigns. The revenue cutter captains have received $2,500 afloat and $1,800 ashore, but hereafter they will have $3,500, and the compensations of the lower grades are proportionally increased. In time of war, when co-operating with the navy, the revenue cutters' officers will take rank immediately below naval officers of the statutory assimilable grade. A few years ago officers as old as ninety and several who had passed seventy were still on active duty, and last year there were captains afloat seventy years of age, although in the regular navy officers are forced into retirement at sixty-two. Under the new order a retired list of forty-six old officers, has already been established, including seven captains and four chief engineers who, although over sixty-four years old, were still performing sea service. The new law makes no change in the personnel of the engineer corps of the service except to make the rank positive and emoluments the same as those of the line officers.

As a notable result of the improved condition and prospects of the service, it is announced that forty-eight young men have already taken the examination before the civil service commission for the twenty vacancies at the bottom of the list. Those who pass the entrance requirements make a two years' practice cruise as cadets and are examined on professional subjects before receiving commissions as third lieutenants or second assistant engineers. The officers of the service are emphatic in their fondness for Admiral Melville, engineer-in-chief of the navy, who appeared before the committee of congress and fearlessly championed their cause for the last two years, arguing for the legislation as simple justice to those on whom rested such responsibilities. A few days ago the service made him a gift of a massive silver loving cup of five pints capacity, with this inscription on one of its panels: "Presented to Rear Admiral George Wallace Melville, U. S. N., by the officers of the United States revenue cutter service, as a symbol of their friendship and a slight token of their admiration for one who fearlessly espoused their cause in time of need, and whose testimony in their behalf commanded the respectful attention of all." On the other panels are his monogram and the date of the new law, April 12, 1902. The cup is 8 in. high, and is elaborately decorated with conventional devices typical of the sea.

Rear Admiral George Wallace Melville, who is leaving nothing undone to secure accurate information about fuel oil, with a view to its substitution for coal as the motive power for warships, has sent his board of experts, consisting of Chief Engineers Edwards, Baily and Parks, to the Delaware river to inspect the tank steamer Paraguay, which had arrived with a cargo of crude Texas oil. The Paraguay made the trip burning oil. She is the first of the vessels now experimenting with oil to be equipped with water-tube boilers similar to those adopted in the navy and the data of her run will be particularly instructive. The board will examine her log and ascertain as far as possible the economy with which she consumed fuel.

PHILADELPHIA'S 30-FT. CHANNEL.

Philadelphia, July 16.—Now that a 30-ft. channel to the sea is assured, all shipping men are having brightest anticipations of a revival of trade which will place Philadelphia in the foremost rank of Atlantic ports. They recall old times when business of this port had not been encroached upon by Baltimore, Boston, Newport News and other smaller ports on the seaboard, which, aided by rapid strides in harbor improvements, have taken away part of the marine commerce of the Delaware river and bay. The plans submitted for the deepening of the channel have been approved and returned to Major Cosby, who is in charge of the Philadelphia office of the United States engineers. Under his direction surveying parties are now down the river making final soundings. On their return specifications will be made out and following that the advertising for bids. Major Cosby said on Saturday, to the Marine Review representative, that the contracts would be let in blocks, presumably about 10 miles of river bottom to each contractor. This he said would expedite work, as each contractor would be instructed to put six to twelve dredges to a section. Actual work will begin about the middle of September. The $600,000 recently appropriated by congress will be spent first, but Major Cosby says he has been empowered to go ahead with assurance that at least $2,400,000 more would be forthcoming.

Land has been bought for the new range lights, which will be necessary as soon as some portions of the channel are straightened. The lights will be in position so that the channel may be used as fast as completed. When the work is fairly under way it is expected that ship owners and masters will forget the sensational stories of disaster which have been published from time to time and which have done much to injure the commerce of this port by making shipmasters afraid to come here for charters.

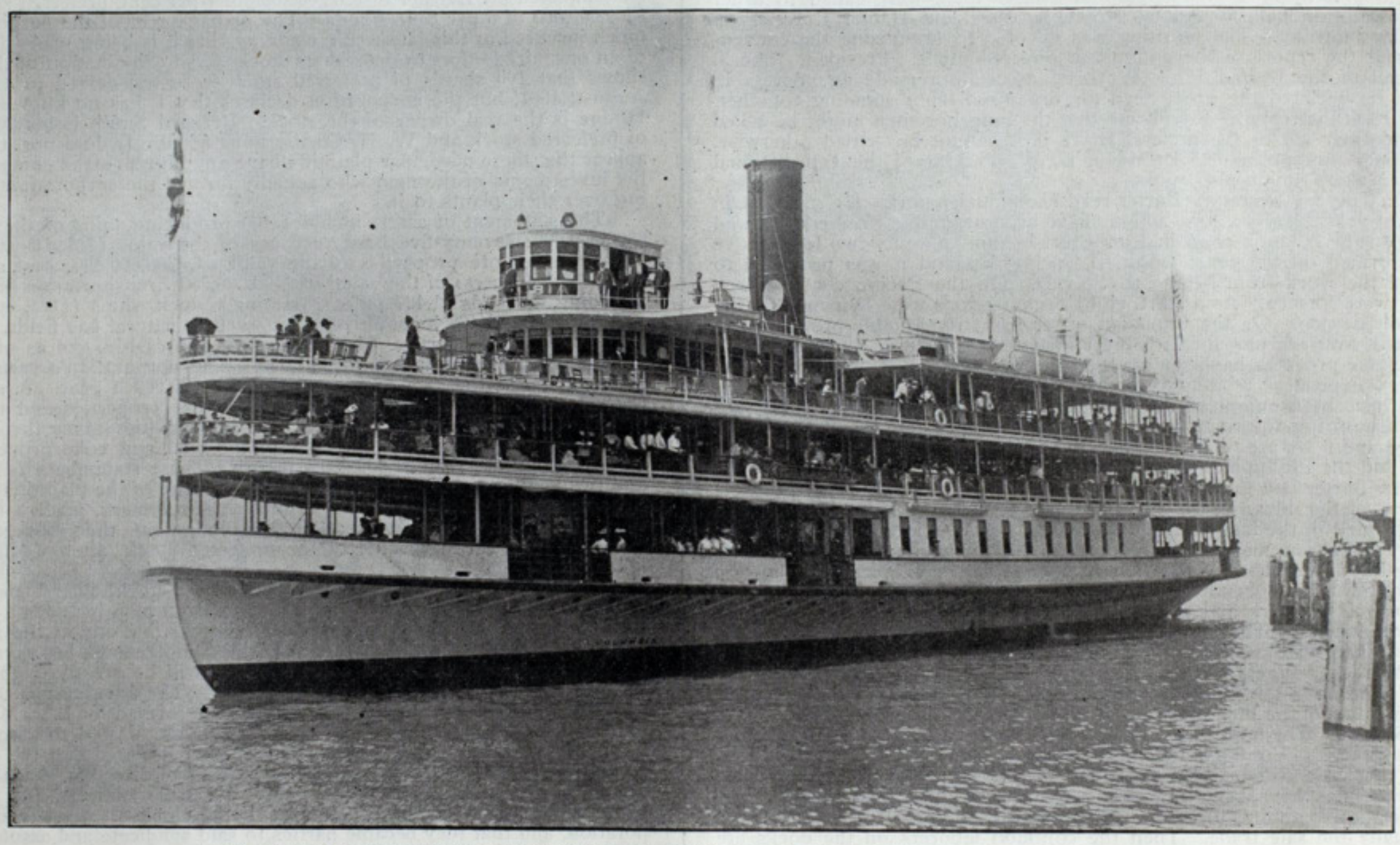
Another improvement is promised soon for the Delaware breakwater. The secretary of war has approved the plan submitted by Lieut. Col. Raymond of the corps of engineers for the expenditure of $110,000 for the construction of additional ice piers for the protection of the harbor of refuge.

The crew to man the new battleship Maine on her builders' trial this week were chosen Thursday and Friday of last week and immediately assigned to their places. The engineers to run the ship on this important trip will be from the shops of the Cramps. Capt. Buckman, Cramps' marine superintendent, will be in command and the vessel will be in charge of Pilot J. A. Clampitt, who has piloted nearly all the warships built by Cramps on their introduction to deep water. The official trial will not take place until the latter part of August or first of September.

Officials of the navy department, the lighthouse board and other government officers will make the annual cruise of inspection of the Delaware bay and river, the harbor of Philadelphia and the river reporting stations on Friday and Saturday of this week. The cruise will take place on the revenue cutter Onondaga.

After undergoing a thorough overhauling and refitting the auxiliary cruisers Panther and Dixie sailed from the League Island navy yard on Wednesday, arriving in Brooklyn on Friday. The Panther immediately took on board the members of the New Jersey naval militia for a two months' cruise. This vessel, now a full fledged fighting ship, was, before her purchase by the government during the Spanish war, the freighter Venezuela. At Brooklyn the Dixie will go out of commission and be fitted up as a hospital ship at a cost of $75,000, to be attached to the fleet for winter maneuvers in the Carribean sea.

The side-wheel steamer Uncatena is nearing completion at the Pusey & Jones yard in Wilmington and will soon sail for New Bedford. She will be used as a passenger and freight boat between New Bedford, Martha's Vineyard and Nantucket. The hull of the Uncatena is of steel and her deck of yellow pine. She is 187 ft. long and 31 ft. beam.

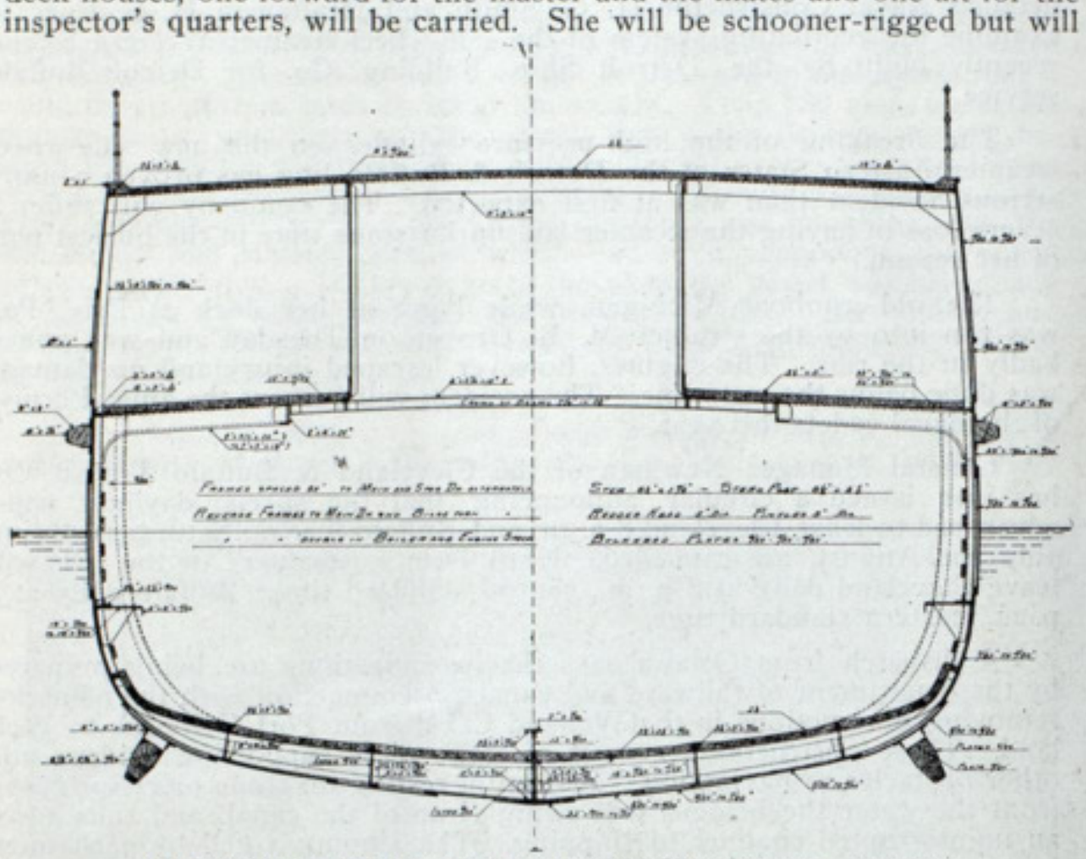


THE NEW EXCURSION STEAMER COLUMBIA, OF THE DETROIT, BELLE ISLE & WINDSOR FERRY CO.

LIGHTHOUSE TENDER CROCUS.

Bids were opened by the lighthouse board at Washington last Thursday for the construction of the lighthouse tender Crocus for service in the tenth lighthouse district, which includes Lakes Ontario and Erie with headquarters at Buffalo. Two bids were submitted, one by the Townsend & Downey Ship Building & Repair Co., Shooter's Island, N. Y., for $119,950, and the other by the Baltimore Ship Building & Dry Dock Co., Baltimore, Md., for $140,000. The latter firm also submitted an alternative bid for $117,760 for the tender as per specifications, minus some of the outfit. The appropriation is $120,000, so that one of the two companies will probably get the contract.

The tender will be 164 ft. 7 in. over all, 154 ft. 6 in. between perpendiculars, 29 ft. beam, molded, and 13 ft. 6 in. depth of hold. She will be of the spar deck type, being one of the first of this type in the service. Two deck houses, one forward for the master and the mates and one aft for the inspector's quarters, will be carried. She will be schooner-rigged but will



CROSS-SECTION OF THE LIGHTHOUSE TENDER CROCUS.

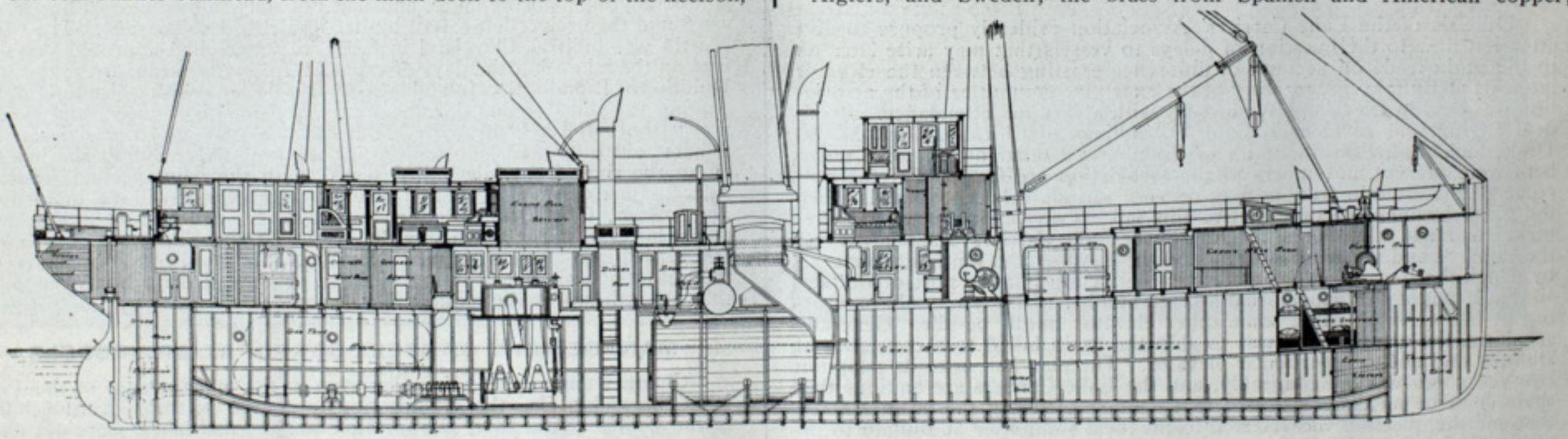
carry no sails. The forward mast is made strong enough and arranged to carry the cargo boom, and the main mast is provided merely for carrying signals required on the lakes. The great improvement of this vessel over the present tender Haze will readily be seen from the following description, and the work in the tenth district will no doubt be more easily and better done and the inspector will have more scope for effective service than is at present the case. Great care and thought has been given to the design of this vessel to allow for large storage capacity, for the easy handling and carrying of buoys of all descriptions, the stowage of large gas tanks for the gas buoy service, the comfort of the men, ample coal supply and to give a reasonably fast boat.

Below the main deck, starting at the stem, there is a store room; below that a trimming tank. Abaft the storeroom under the main deck are the crew's sleeping quarters; below them the chain lockers, one on either side of the vessel. The space from the bulkhead of these compartments to the coal bunker bulkhead, from the main deck to the top of the keelson, comprises the cargo space of the boat, that is the main cargo space. A distance of eight frame spaces comprises the coal bunker. The coal bunker has a capacity of about 116 tons. The boiler and engine spaces come next. Abaft the engine space is a space devoted to the stowage of the gas tanks. A pocket in the after engine room bulkhead provides for the location and handling of the thrust blocks. Abaft the gas tank space is the after trimming tank and above that a storeroom.

On the main deck, starting at the stem, the windlass space comes first; abaft that on the starboard side of the vessel is the crew's mess room with a wash room at the forward end. On the port side abreast of this space is located the firemen and oiler's quarters, both eating and sleeping, with a wash room at the forward end. Abaft the bulkhead of these compartments is the open space allotted to the stowage of buoys, booms, and all large or bulky matter. The space amidship on this deck in the center of the vessel is taken up by the galley forward, the uptake enclosure or drum room next, the dynamo room and the upper engine room. On the port side amidship the space is divided off into staterooms for the officers of the ship with an ice-box located in the wake of the galley. The space on the starboard side amidship is reserved for loose cargo, barrels, etc. A lamp room, shelves and a machinist's bench are located on this side of the ship in the wake of the uptake enclosure. Abaft the upper engine room is located the officers' mess room, the officers' pantry and bath room. At this point a bulkhead extends all the way across the ship, abaft of which is located the water closets and a space laid off for small stores with lockers along the sides. This space will also contain the gas compressing machinery.

The upper deck is devoted to the master's room in the forward deck house, the two mates on either side, with the steering engine room in the center and the pilot house above. These rooms are very well fitted up and give ample room for comfort. The noise from the steering engine will be deadened by the space between the bulkheads filled in with some deadening material.

In the after deck house the inspector is provided with very fine and commodious quarters. In the forward end is located the pantry on the port side with a stateroom on the opposite side. A built-in skylight over the engine room is between these rooms. Abaft of these rooms is located the inspector's saloon. This room is very large and great pains has been taken to make it as comfortable as possible. It contains a desk, book cases, dining table and chairs, easy chairs and the two bed sofas located in the after end. The latter can be curtained off when used for sleeping. A passage way leads aft out of the saloon with the inspector's stateroom on the starboard side, another stateroom on the port side and a bath room at the end of the passage. The inspector's stateroom is very long and roomy. Abaft of it and communicating with it is a chart room which can be used for a dressing room. The boats are carried on skid beams on a level with the top of the deck house. The ship will carry three boats—a cutter, a whale boat and a dinghy. The forward part of the upper deck is devoted to the carrying of buoys, cargo, etc., which is too bulky to lower into the hold or take in at the ports. Cargo ports forward and aft give ample facilities for loading and unloading from wharves and light vessels when the weather will permit.



LONGITUDINAL SECTION OF THE LIGHTHOUSE TENDER CROCUS.

SIR CHRISTOPHER FURNESS ON THE AMERICAN INVASION.

Sir Christopher Furness, who visited the United States recently, has written a book entitled "The American Invasion." It will be noted that during the late flurry in England over the apparent encroaches of American trade a considerable sentiment arose in favor of protection. This is the poisonous virus for which Sir Christopher is seeking an antidote. He urges the government to leave commerce and industry to work their own salvation. Indeed, as it is pointed out by Sir Christopher, the state has enough to do in maintaining law and order; in defending the weak by proper supervision of conditions injurious to health and safety of life; but beyond this the government should not interfere. Sir Christopher states the advantages of the United States in the industrial competition to be as follows: Superior and cheaper raw materials; more attention given by substantial men to the commerce and industries of the nation; a system of education better adapted than Britain's to fully and adequately equip the lieutenants and captains of industry for the work they have in hand; the absence of heavy railway charges and mining royalties. He thinks the British artisan superior to the American artisan, but of all other considerations which tell in favor of the British manufacturer none is comparable to the advantage which is derived from free trade.

"I contend," he says, "that protection in England would not pay commercially. To illustrate: We still hold the fort in ship building. What is ship building? It is the bringing together and working up in Great Britain of raw material obtained at the lowest price from different parts of the world, which operation involves a very large expenditure of wages. The steel in steamers is made from ore produced in Spain, Algiers, and Sweden; the brass from Spanish and American copper; spelter is produced in Germany, and tin obtained from Asia; the woodwork is made from lumber imported from Sweden, Russia, Canada, America and our colonies; the paint from Spanish, Australian and American lead; the rope from Russian and Manilla hemp. Now, to build a steamer at a satisfactory price, and to pay the immense wages bill, these articles must be bought at the lowest possible price. If parliament with the object of protecting English lead, iron, copper and tin mines, British forests, etc., were to impose import duties, the cost of the steamers would be increased, the demand would fall off, and the amount distributed in wages would be materially reduced, whereby the whole community would suffer."

There seems to be a general idea that trade between the United States and the Philippines is confined to United States vessels. This is not the case. The Philippine islands are exempted from the United States coasting trade by the fourth article of the American treaty with Spain, which provides that trade with the Philippines is not to be restricted to American vessels.

SUMMARY OF NAVAL CONSTRUCTION.

The monthly summary regarding construction of new vessels, issued by the bureau of construction and repair of the navy department, shows steady progress. While the report does not indicate it, the last of the battleships has now been laid down, Moran Bros. Co. having stretched part of the keel of the Nebraska at Seattle on July 4. Following is the summary:

Name.	Building at	Degree of completion, Per cent. June 1.	July 1.
BATTLESHIPS.			
Maine	Cramp & Sons	90	91
Missouri	Newport News Co	65	66
Ohio	Union Iron Works	59	60
Virginia	Newport News Co	1	2
Nebraska	Moran Bros. Co.	0	0
Georgia	Bath Iron Works	10	11
New Jersey	Fore River S. & E. Co.	9	10
Rhode Island	Fore River S. & E. Co.	8	10
ARMORED CRUISERS.			
Pennsylvania	Cramp & Sons	23	27
West Virginia	Newport News Co.	22	25
California	Union Iron Works	5	6
Colorado	Cramp & Sons	26	30
Maryland	Newport News Co.	20	23
South Dakota	Union Iron Works	5	5
SHEATHED PROTECTED CRUISERS.			
Denver	Neafie & Levy	80	82
Des Moines	Fore River S. & E. Co.	71	72
Chattanooga	Lewis Nixon	59	60
Galveston	Wm. R. Trigg Co.	60	61
Tacoma	Union Iron Works	47	50
Cleveland	Bath Iron Works	82	83
St. Louis	Neafie & Levy	3	3
Milwaukee	Union Iron Works	2	2
Charleston	Newport News Co.	5	9
MONITORS.			
Arkansas	Newport News Co.	96	97
Nevada	Bath Iron Works	93	93
Florida	Lewis Nixon	92	93
Wyoming	Union Iron Works	86	89
TORPEDO BOAT DESTROYERS.			
Bainbridge	Neafie & Levy	99	99
Barry	Neafie & Levy	99	99
Chauncey	Neafie & Levy	99	99
Dale	Wm. R. Trigg Co.	99	99
Hopkins	Harlan & Hollingsworth	93	94
Hull	Harlan & Hollingsworth	90	93
Lawrence	Fore River S. & E. Co.	99	99
MacDonough	Fore River S. & E. Co.	98	98
Paul Jones	Union Iron Works	92	95
Stewart	Gas E. & P. Co.	72	72
Truxton	Maryland Steel Co.	96	98
Whipple	Maryland Steel Co.	93	96
Worden	Maryland Steel Co.	91	93
TORPEDO BOATS.			
Stringham	Harlan & Hollingsworth	98	98
Goldsborough	Wolff & Zwicker	95	95
Blakely	Geo. Lawley & Son	98	98
DeLong	Geo. Lawley & Son	99	99
Nicholson	Lewis Nixon	98	98
O'Brien	Lewis Nixon	98	98
Tingey	Columbian Iron Works	74	74
SUBMARINE TORPEDO BOATS.			
Plunger	Lewis Nixon	93	93
Adder	Lewis Nixon	99	99
Grampus	Union Iron Works	81	82
Moccasin	Lewis Nixon	99	99
Pike	Union Iron Works	72	74
Porpoise	Lewis Nixon	97	97
Shark	Lewis Nixon	96	96

TO AVOID TROUBLE AT GRAIN ELEVATORS.

Officials of the Lake Carriers' Association evidently propose to give attention now to the question of delays to vessels that may arise later on in the grain trade on account of difference existing between the elevator interests at Buffalo. A meeting of the executive committee of the association was held in Cleveland Wednesday with a very full attendance. President Livingstone of Detroit, Capt. D. Sullivan of Chicago, Capt. M. M. Drake and Capt. Edward Smith of Buffalo, and other out of town members were present. Members of the association are fearful that the outcome of the Buffalo trouble may be very serious delays to vessels when the grain business becomes active this fall. Two years ago an arrangement was made at a general meeting of the Lake Carriers' Association and the shippers and receivers of grain and the elevator and railroad managers, by which there was secured to vessels the facilities of the port of Buffalo, so that it might not happen that a large number of vessels would be waiting at one elevator while some other elevator might be idle. Generally speaking, the arrangement was to ship the grain billed to a consignee at Buffalo, and not to a particular elevator. The plan has since its adoption two years ago worked admirably, and the Lake Carriers are anxious that there shall be no disturbance of that manner of doing the business. To that end the question was referred to the local committee at Buffalo to investigate present conditions, especially in relation to the agreement of two years ago under which such good results have been secured, and to enforce the provisions of that agreement so far as may be necessary.

Arrangements were also made for the establishment of telephone service between Buffalo breakwater and the city. This service will greatly facilitate the handling of vessels at Buffalo elevators.

Officials of the Craig Ship Building Co. of Toledo seem to be very largely interested in the Adams Transportation Co. of Detroit, for whom they have just finished a large steel freighter with a second one under way. Articles of incorporation of the Adams company, just filed in Detroit, show a paid up capital of $115,000. The first steamer is, of course, costing more than $115,000. The balance of her cost has undoubtedly been taken care of by bonds. The stock is divided as follows: Thomas Adams, Detroit, 575 shares; John I. Adams, Detroit, 20 shares; John Craig, Toledo, 852 shares; George L. Craig, Toledo, 427 shares; John F. Craig, Toledo, 426 shares.

General offices of the Chicago Pneumatic Tool Co. now occupy the entire tenth floor of the Fisher building, Chicago.

AROUND THE GREAT LAKES.

Capt. H. A. Byrns of Cleveland will sail the steel barge Maitland, which was launched at Buffalo on Thursday last, for the Franklin Transportation Co., of which D. R. Hanna is manager.

The wooden steamer Kittie M. Forbes, which burned to the water's edge about six weeks ago, and was beached on the Canadian side of the St. Clair river, opposite the Star Island house, has been raised by Capt. H. W. Baker of Detroit.

It is reported from Toledo that the Pennsylvania Railroad Co. has completed a plan of docks at that point involving an expenditure of nearly $1,000,000. The specifications call for nearly a mile of dockage, involving a fill of about 2,000,000 ft.

Admiral Bowles, chief constructor of the United States navy, has detailed Naval Constructor H. G. Smith and Draftsman H. S. Eper to examine the ventilating system of the side-wheel steamer Western States, recently built by the Detroit Ship Building Co. for Detroit-Buffalo service.

The breaking of the high-pressure cylinder on the new side-wheel steamer Eastern States of the Detroit & Buffalo line has proven a more serious accident than was at first expected. The company will suffer a severe loss in having the steamer laid up for some time in the busiest part of her season.

The old gunboat Michigan, while lying at her dock at Erie, Pa., was run into by the steamer M. B. Grover on Tuesday and was poked badly in the ribs. The engines, however, escaped injury and no damage was done below the waterline. The accident will prevent the annual cruise of the naval cadets this year.

General Manager Newman of the Cleveland & Buffalo Transit Co. has just issued a circular announcing that the special daylight trips, advertised to leave Cleveland 8 a. m. and Buffalo 9 a. m. Saturdays during July and August, are cancelled. Until Dec. 1, steamers of the line will leave Cleveland daily at 8 p. m., central standard time; Buffalo daily at 9 p. m., eastern standard time.

A dispatch from Ottawa says that specifications are being prepared by the department of railways and canals in connection with the plans for removing obstructions in the Welland Canal from Port Colborne to Welland. These obstructions consist of stone piers supporting bridges and other obstacles to navigation. Instead of resting on stone piers springing from the water the bridges will swing clear of the canal, and thus allow an uninterrupted channel to shipping. The amount voted by parliament for the improvements is $95,000.

Gauge records of the United States lake survey show the following mean stages of water for June, above mean sea level: Lake Superior, 602.08 ft.; Lakes Huron and Michigan, 580.06 ft.; and Lake Erie, 572.21 ft. These stages show Lake Superior to have been 0.03 ft. higher than during same month last year, and 0.06 ft. lower than in June, 1895; Lakes Huron and Michigan were 0.42 ft. lower than during same month last year, and 0.29 ft. higher than in June, 1895; Lake Erie was 0.40 ft. higher than during same month last year, and 0.55 ft. higher than in June, 1895.

The following from the Detroit Tribune merely illustrates what we have hitherto said—that total destruction of a vessel's hull on the great lakes is a very long process: "The eyes of many passengers on the up-river steamers this year have been drawn to an old, dilapidated looking three-masted schooner lying off the Detroit Ship Building Co.'s dry dock. Those who pass close enough may read on her bow the legend 'Maria Martin.' All recognize her as a representative of the old days of 'wind-jamming.' Few know that in her day this battered hulk could outstrip almost anything on the lakes, and that not only sailing vessels but steamers found themselves left astern by her in a two-days' voyage. The Maria Martin was built at Cleveland in 1866. Steamers had appeared years before on the lakes, but the days of canvas were by no means over, and from Duluth to Buffalo the inland seas were dotted with gleaming sails. Among the ships of that day the Maria Martin was a queen, and even in recent times she held her own. But about a year ago it was decided to put her out of commission and so for the last twelve-month she has lain along the river front idle and deserted, with the paint peeling from her sides and her masts decayed and sprung. However, it will not be for long. Her owner, Capt. John Dorrington, says that as soon as freight rates shows signs of going up to stay the Maria Martin will be put on the ways and turned into a screw steamer. Her hull is in good condition, and when in commission she has a rating of A2½, so Capt. Dorrington is confident that she will still make money as a steamer."

MANAGEMENT OF STEEL CORPORATION VESSELS.

Changes announced a few days ago in the management of the Pittsburg Steamship Co., the organization in charge of transportation affairs of the United States Steel Corporation on the great lakes, were not unexpected. It has been understood for some time past that Mr. Edwin S. Mills, who was assistant manager of the steamship company with Mr. A. B. Wolvin, was to be taken into the councils of the big organization in New York. The change to that of assistant to First Vice-President James Gayley of the Steel Corporation is undoubtedly pleasing to Mr. Mills. It places him in the congenial company of his first business associates: in close touch with the leading officials of the Steel Corporation, who had entrusted to him very important lake interests when in the employ of the Carnegie company. The appointment of Mr. A. F. Harvey of Duluth to the position of assistant manager of the steamship company, made vacant by the resignation of Mr. Mills, is another step in the direction of concentrating all matters of authority in the Duluth office, where Mr. Wolvin makes his headquarters. Mr. Harvey's training in vessel matters before accepting a position with Mr. Wolvin was obtained in the office of Pickands, Mather & Co., Cleveland, where a large fleet of vessels was managed previous to the consolidation. He is competent and enjoys the acquaintance and respect of vessel men throughout the lakes. Mr. E. C. Collins, formerly assistant to Mr. Mills, is now general agent of the Pittsburg company with headquarters in Cleveland. He will have to do mainly with dock matters—the distribution of ore at Lake Erie ports.

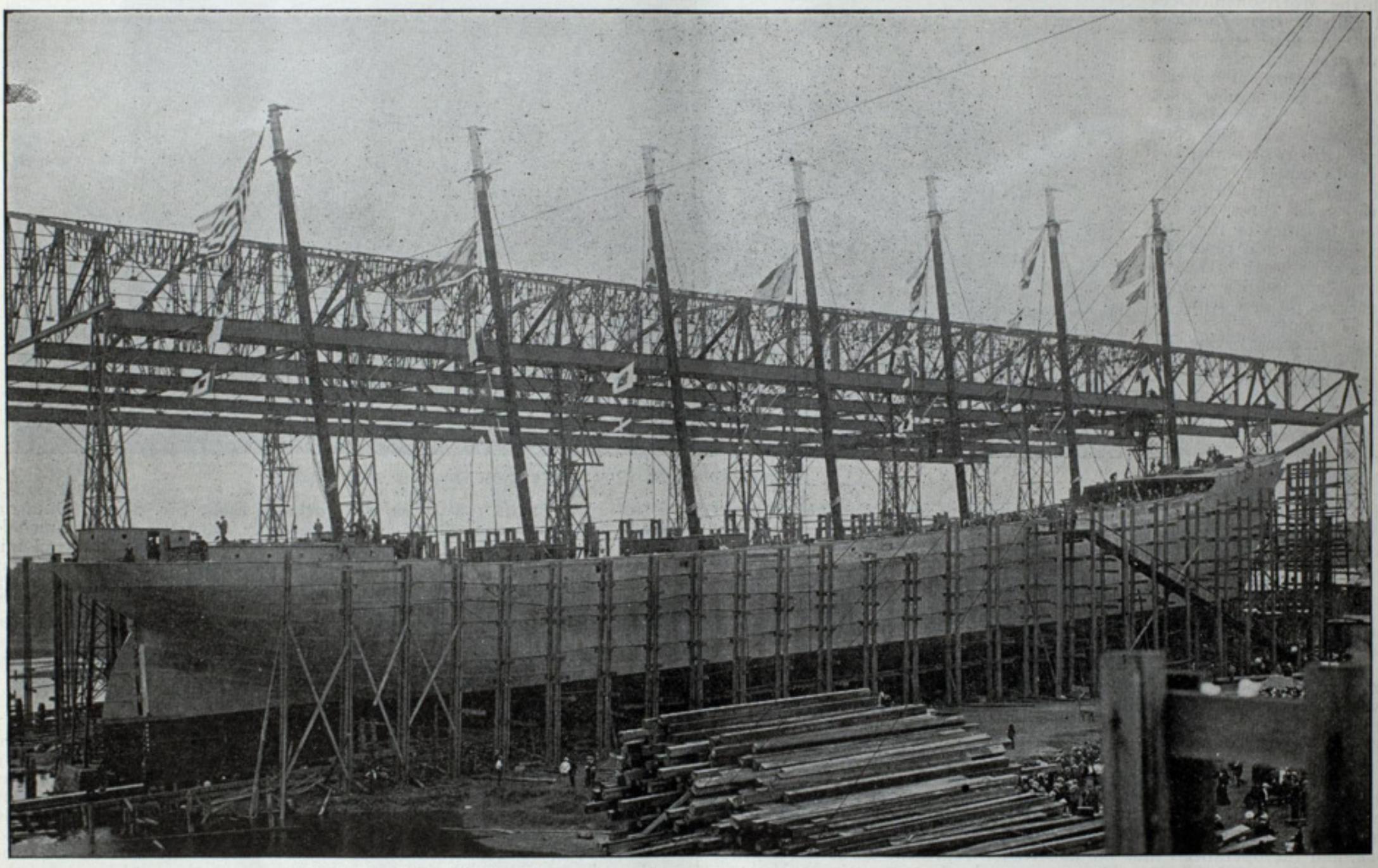
LAUNCH OF A SEVEN-MASTED STEEL SCHOONER.

It is estimated that 10,000 persons witnessed the launch of the seven-masted steel schooner Thomas W. Lawson at the works of the Fore River Ship & Engine Co., Quincy, Mass., last Thursday. Miss Helen Watson, daughter of Thomas A. Watson, president of the Fore River company, christened the vessel. The schooner, which is the first seven-masted vessel ever constructed, was launched with her steel lower masts stepped and partially rigged. The hull rested on a cradle 282 ft. long, leaving an overhang of 50 ft. aft. The ground ways were 2 ft. wide and 1 ft. thick and extended about 300 ft. astern of the schooner on a foundation of piles. The sliding ways were narrower than the ground ways, being 19 in. wide, giving a bearing surface of 800 sq. ft. As the weight of the vessel when launched was 2,500 tons, the pressure on the ways was about 3 tons to the square foot. The cradle was fitted to the lines of the hull and then removed, so that on the night before launching the ground ways could be smeared with "launching grease." About 3,000 lbs. of tallow was spread on the ways, covered with soft soap. The tallow was tried out at the yard to make sure that it would have sufficient body to stand the weight. Over 200 men, under the foreman shipwright, "set up" the vessel, that is, by driving wedges between the packing and the sliding ways enough to raise the vessel from terra firma until her weight was taken upon the ground and sliding ways. While this was going on, a portion of the force was knocking out the keel blocks and shores, both of which had been supporting the vessel during construction. At this stage of the work the vessel was held ready for launching by bolts through the forward ends of the sliding and ground ways. The vessel was released by sawing through the sliding ways aft of the fastenings.

The Thomas W. Lawson measures 403 ft. over all, 368 ft. on the water line, has a beam of 50 ft. 5 in., and a load draught of 26½ ft. She has a cargo capacity of about 8,100 tons, and her displacement, when fully loaded, will be about 10,000 tons. Forty-three thousand square feet of canvas will be stretched from seven masts 155 ft. high, the lower masts being steel cylinders 135 ft. long and 32 in. in diameter, weighing nearly 20 tons each. The topmasts are of Oregon pine, 58 ft. long. The spike bowsprit is of steel, 85 long, so that from the tip of her bowsprit to the tip of her aftermost boom she will measure 478 ft. She has six engines, one forward of 40 H.P. to work the capstan and hoist her two 10,000-lb. stockless anchors, and five others of 25 H.P. each to handle the sails and do stevedore work at her six hatchways when she is in port. The Lawson has a double bottom of cellular construction, 4 ft. deep, between the inner and outer plating, divided into four compartments capable of carrying 1,000 tons of water ballast. Besides this, there is a trimming tank at each end. Over 2,000 tons of open-hearth steel have been used in the construction of the hull, the plating of which is on the joggle system. She has two continuous steel decks, besides a lower deck composed of a tier of beams connected together with stringers and tie plates. The ends of the vessel are very strongly built and are connected to each other by stringers between decks running the whole length of the vessel.

The vessel has a forecastle and poop deck, a cabin, and two deck houses, besides a wheel house. The cabin joiner work is of oak, natural finish, of plain and neat design. The weather decks and deck houses are covered with deck plank. The vessel is steered by both hand and steam power. She has complete plumbing and drainage systems, so connected that each compartment can be pumped out separately, or as a whole, by steam; also by two hand pumps. Steam is supplied by two boilers set at either end of the schooner. A siren whistle will be provided, and the cabin will be piped for steam heating. In addition, an electric plant and a telephone system will be installed.

The Lawson will carry a crew of sixteen men, all told, with Capt. Arthur L. Crowley as her commander. She has been built for a syndicate headed by Capt. John G. Crowley. When commissioned, she will be used in the coal carrying trade between southern and northern ports, and later may be sent to the Philippines.



SEVEN-MASTED STEEL SCHOONER THOMAS W. LAWSON—JUST BEFORE LAUNCHING.

NAVAL ITEMS.

The navy department has received telegrams from the Union Iron Works of San Francisco and from Lieut. Wenton of the trial board announcing that the torpedo boat destroyer Paul Jones has passed a successful trial. The lieutenant says: "Official trial, maximum speed 28.91 knots on 336 revolutions and 7,900 H.P.; 27.42 knots for one hour at 322 revolutions."

The navy department has directed that the work of repairs to the battleships Kearsarge, Alabama and Massachusetts at the New York navy yard and the cruiser Olympia at the Boston yard be completed at once, so that the North Atlantic squadron may get out at sea and in shape for the coming summer maneuvers in conjunction with the army.

A 6-in. Bethlehem plate, representing side armor for the new protected cruisers of the Colorado and Pennsylvania class, was tested at the Indian Head proving ground last Saturday. Three shots were fired at the plate at velocities of 1,895-ft. seconds each. The plate stood an excellent test, and appeared to be fully up to the standard of the armor now being supplied for the navy.

Rear Admiral M. T. Endicott, chief of the bureau of yards and docks, has made a suggestion looking to an increase in the number of available candidates from whom may be chosen the three appointees to his corps authorized by the naval appropriation act. He has suggested that examinations be held in Pittsburgh and Chicago, in the hope that they will attract many young men of the professions who are now employed in those two cities, who would not think of making a trip to the coast cities with the uncertainty of successfully passing the examination. At the last examination there were twenty-two candidates, and only two qualified. The next examinations will be held in September.

A report from Washington is to the effect that the most trustworthy information regarding the naval strength of Japan is as follows: Six new battleships with 276 guns; two old battleships with forty-six guns; ten battleships for coast defence, with ninety-nine guns; six first-class cruisers, with 221 guns; nine second-class cruisers, with 247 guns; five third-class cruisers, with 103 guns; two first-class gunboats, with nineteen guns; fourteen second-class gunboats, with sixty-two guns; four aviso ships, with thirty-five guns; one transport, with eight guns; total, fifty-nine ships, 1,110 guns. There are also seven first-class torpedo boats, thirty-six second-class torpedo boats, twenty-six third-class torpedo boats, one fourth-class torpedo boat, nineteen torpedo-boat destroyers.

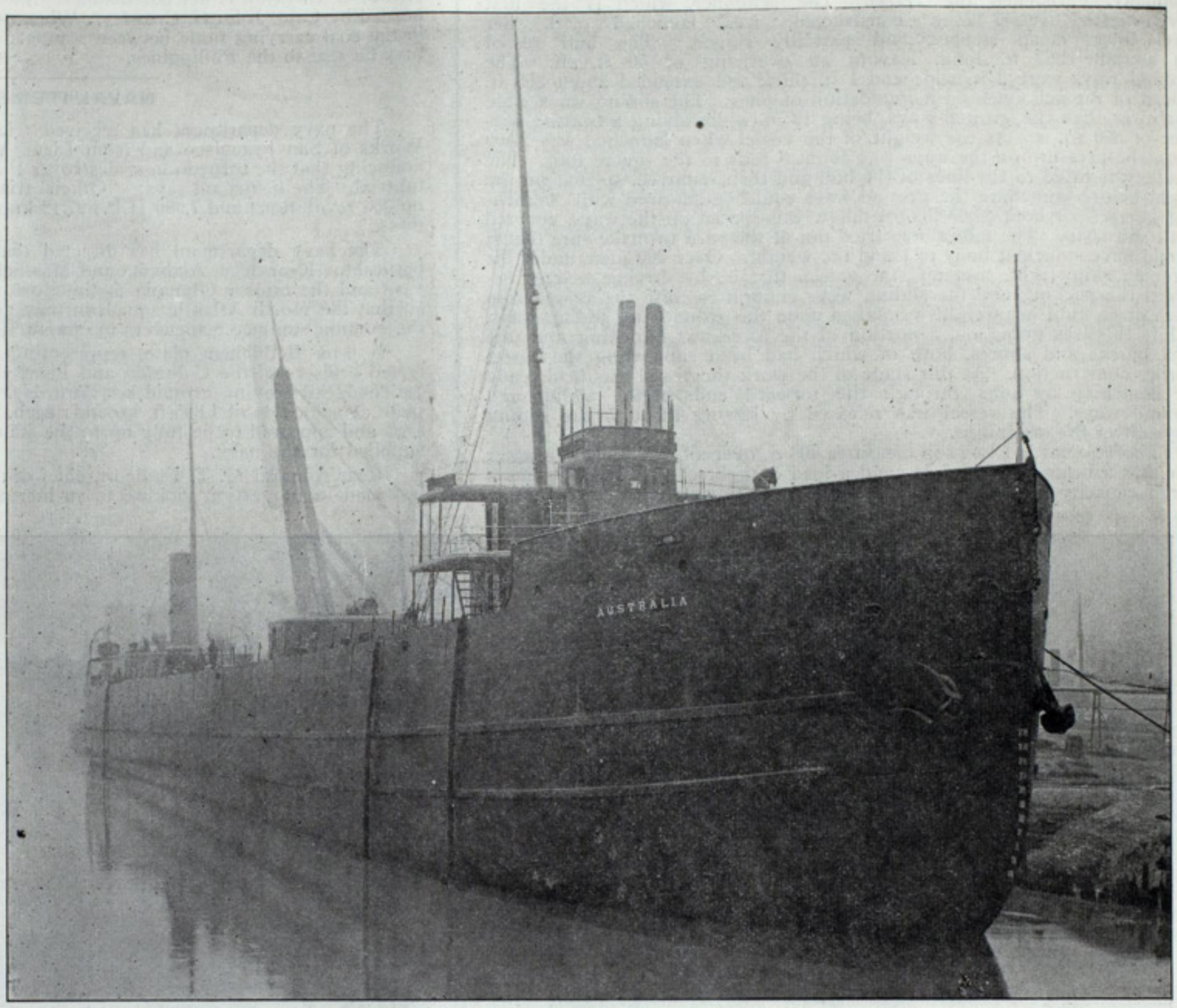
The Clyde liner Apache is now at the Cramp ship yard where work has been begun on cutting her in half. When this is completed the halves will be drawn apart and 52 ft. built up in the center.

THE STEAMER AUSTRALIA.

The late freighter Australia, which was recently converted from a tow barge to a screw steamer by the Shipowners Dry Dock Co. at North Halsted street bridge, Chicago, is reported to have made over 12 miles an hour on a run from Escanaba to South Chicago, and has done very well in towing the Polynesia of the Corrigan fleet.

In the work of changing this vessel at the Chicago yard new channel steel intercostal stringers were fitted right-fore-and-aft to strengthen the hull, besides a new stern frame and rudder and after body bossed for propeller shaft. The engine is of triple-expansion type with cylinders of 20, 33½ and 55-in. diameter and 42-in. stroke. The usual auxiliary machinery was installed and the electric light plant and steering gear overhauled. Steam is furnished by two Scotch boilers, 12½ ft. in diameter and 12 ft. long, built for a working pressure of 175 lbs. per square foot and equipped with the Morrison furnaces and Ellis & Eaves induced draft. A new steel deck house was built aft for the accommodation of officers and crew, and a new pilot house and texas forward. The vessel was also furnished with two raking and gracefully-tapered Oregon-pine spars. The work done on this vessel shows the excellent facilities of the new ship building and repairing plant on the north branch at Chicago and augurs well for its success on new work as well as repairs.

The steamer America, which struck on the point at Waugoshance, near Mackinaw straits, on April 26, was also in the Shipowners dry dock for about four weeks. The work done on her necessitated the removal of seventy plates, sixty-one of which had to be replaced by new plates. There were also eighty-nine floors and 105 frames replaced. The tank top was badly started, which caused the removal of the entire floor, which was re-riveted and caulked.



STEEL STEAMER AUSTRALIA—FORMERLY A TOW BARGE.

CONSOLIDATED LAKE SUPERIOR CO.

As the following was specially prepared for the Bulletin of the American Iron and Steel Association it is doubtless correct and is therefore valuable as a directory of the Clergue enterprise at the Sault:

The Consolidated Lake Superior Co., which conducts large operations on both sides of the St. Mary's river, located principally at the town of Sault Ste. Marie, Ont., is chiefly a Philadelphia enterprise, having been organized by Philadelphians and the larger part of its capital having been supplied by Philadelphia capitalists. The general offices of the company are in the North American building in Philadelphia, where all the financial operations of the company are centered. The various industrial operations controlled by it are directed from the offices at Sault Ste. Marie, Ont. The Consolidated Lake Superior Co. has an authorized capital of $35,000,000 7 per cent preferred stock, and $82,000,000 common stock, and the operations thus far undertaken represent an actual expenditure of about $25,000,000. The company is the parent organization, which owns the stock of a number of subsidiary corporations by which the various industrial operations are conducted. Among these subsidiary interests are the following:

(1) Lake Superior Power Co., which owns lands and water rights at Sault Ste. Marie, Ont., with a power canal which yields about 20,000 H. P., this being supplemented by a second canal on the Canadian side soon to be constructed; (2) The Michigan Lake Superior Power Co., which owns the water power rights on the Michigan side and is constructing a canal which will yield over 40,000 H. P. and which will be complete and in operation during the present year; (3) The Sault Ste. Marie Pulp & Paper Co., which operates a ground wood pulp mill capable of producing 100 tons a day of pulp and also a sulphite mill of about 60 tons a day. both of which are on the Canadian side and operated by power from the Canadian canal; (4) The Tagona Water & Light Co., which supplies water and light to the town of Sault Ste. Marie, Ont.; (5) The Algoma Steel Co., Ltd., which operates a Bessemer steel plant and rolling mill; (6) The Ontario Lake Superior Co., which, while controlled by the Consolidated Lake Superior Co., is a corporation that owns and controls a number of subsidiary interests on the Canadian side, among them the Algoma Central & Hudson Bay Railway, which is now under construction northward from Sault Ste. Marie to the Helen and Josephine mines in the Michipicoten district, Ontario; and the Algoma Commercial Co., which conducts extensive land, timber and mineral operations upon the lands granted by the Canadian government for constructing the road.

Mining operations are being conducted upon an extensive scale at the Helen iron ore mine, which is located about 12 miles from Michipicoten harbor, and the ore is carried in the company's boats to the lower lake ports. In the vicinity of Sudbury extensive mining operations are conducted in the nickel and copper deposits. Smelters have been erected for the treatment of portions of the ore at the mines, while part of the ferro-nickel ore is roasted at the works at Sault Ste. Marie, Ont., and made into briquettes, which are subsequently smelted into ferro-nickel—a pig iron containing a high percentage of nickel. The steel rail mill, which rolled its first turn on May 5, is now running regularly and is rapidly reaching its full capacity of between 500 and 600 tons per day. The officers of the Consolidated Lake Superior Co. are: President, E. V. Douglas; vice president and general manager, F. H. Clergue; vice-president and treasurer, T. C. Search; vice-president, F. S. Lewis; vice-president, E. C. Lee; secretary, W. P. Douglas; assistant secretary and assistant to president, Edward H. Sanborn.

IMMENSE NEW SHIP PIER.

The Baltimore & Ohio Railroad Co. will construct a new double deck pier at Locust point, Baltimore, for use by the North German Lloyd Steamship Co. at a cost of about $600,000. It is understood that the improvements contemplated by the company during the next three or four years will aggregate $2,000,000. The new pier will be 800 ft. long, 160 ft. wide and will have dock space on the east side of 600 ft. length and on the west side 800 ft., with a width of 200 ft. and depth of water on either side of 32 ft. The east side will have a track on the outside of the platform that will permit the loading and unloading of heavy articles direct from ship to car without entering the shed. The superstructure will be 800 ft. long and 50 ft. high to the eaves, by 148 ft. wide. A driveway will enable vehicles to be driven to the side of steamers. There will be offices on the main floor for the steamship company and the railroad company, and a reception room for cabin passengers. Passengers will be landed from the steamers on the second floor. The United States government will be assigned large space to be used as a bonded warehouse for import freight. Two electric elevators will connect the first and second floors. The entire building will have modern ventilation, electric lighting, steam heating and fire protection as perfect as possible. The old pier used by the North German Lloyd Co. is 700 ft. long, 70 ft. wide and 16 ft. high, with a floor area of 49,000 sq. ft. The new pier will have a floor area on both floors of 236,800 sq. ft.

A meeting was held at Sault Ste. Marie last week to promote the proposed semi-centennial celebration of the breaking of ground for the construction of the first canal at that place. This will occur on June 4, 1903. Committees were appointed to further the movement.

On July 13, 1893, the last wooden ship built in America was launched from the yard of Charles V. Minott of Phippsburg, Me. This ship was the Aryan. Steel and iron ships have since been constructed, but all wooden craft have had a different rig. Aryan means in Indian the last of her race, and she is therefore very well named.

STANDARDIZATION OF PARTS.

The advantages of standardization of parts are so many and so obvious that it would seem superfluous to argue in their favor; and yet the system is only beginning to be adopted in Great Britain. To be just, however, it was an Englishman who first pointed out to manufacturers the great economy of a system of standard fittings. It is just now becoming a subject of serious consideration by the British admiralty and war office, as the following editorial from the London Times will show:

"The favorable reception given by Mr. Balfour to the deputation which lately waited upon him on the subject of engineering standards, as reported by us a day or two ago, and his announcement that both the war office and the admiralty were prepared heartily to co-operate with the efforts of the eminent committee which approached him on the subject are full of promise for some of those departments of British industry which of late years have been most seriously threatened by foreign competition. Few people have any adequate conception of the waste of money, of time, and of material which is consequent upon the employment of all manner of irregular shapes and sizes in various kinds of constructive work; and the evils hence arising—although attention was first called to them by an eminent Englishman more than sixty years ago—have been tolerated in this country with an indifference or supineness which has not been displayed elsewhere. It was in 1841 that the late Sir Joseph Whitworth pointed out the inconvenience constantly arising from the different patterns of screws then employed by different makers of machinery, with the result that a machine in some distant part of the world might be crippled for want of a single screw, and might remain so until sufficient time had been given to send to the workshop of the original maker for the supply of the deficiency. He proposed that manufacturers should agree upon a uniform size and pitch of thread for every diameter of screw or of aperture, and was promptly met by the contention that the form used in every workshop was, in some point or other, better than the rest. Firm A would not use the screws used by firm B, and firm C would have nothing to do with those of either. But the shrewd and patient north countryman was not easily discouraged. He evaded the difficulty by producing the exact mean of several patterns used by the most eminent firms, and his proposal was adopted by acclamation. He had so far foreseen this result as to have quietly prepared machinery for dealing with it, and when the standard screws were accepted he was at once in a position to supply the tools necessary for cutting them. His attention was soon after diverted to other subjects, but he constantly regretted his inability to deal with other things as he had dealt with screws, and was never weary of expatiating upon the advantages which would accrue to British industry from the national adoption of a sufficient variety of standard sizes in all departments of manufacture. His favorite object lesson was furnished by a candle wabbling loosely in a candlestick, and only rendered firm by a band of paper, or by one requiring to be scraped before it could be fixed; and he would ask why candle makers should not agree as to the number of sizes required by consumers, and why every No. 1 British candle should not fit easily and correctly into every No. 1 British candlestick. The iron and timber parts of buildings, such as girders, doors, door frames, window sashes, and the like, moved him to wrath by their diversity; and he was accustomed to maintain that the convenience which would be afforded to purchasers by the general adoption of a proper number of English standards, and by accurate working to them, would be sufficient to give something like monopoly of the trade in every branch of manufacture in which the principle was carried into effect.

"Perhaps, the first important step toward action upon Whitworth's principles was taken some years ago by an association representing the principal railroads of America, which had for one of its objects the attainment of uniformity in the patterns of rails and in the parts of locomotives. This association set itself to determine, for example, how many patterns of locomotives were required for the various demands of traffic—for express engines, goods engines, shunting engines, and so forth—and how these might be made in the most economical and practical way. The result was, certain patterns having been adopted by all the companies included in the association, that manufacturers were able to work for stock at times when they had no orders in hand, and to do this without danger of finding themselves burdened with unsalable goods. An incidental consequence was, of course, comparative cheapness of manufacture, and that in a degree which speedily made itself felt when railways outside America were coming into the market as purchasers, and were content to deny themselves the luxury of engines which had been 'specially designed' by their own officials. Mr. Balfour told the deputation not only that 'the advantages of standardization were obvious,' but also 'that no human being could have a doubt as to the magnitude and the importance of the subject,' and that, as far as he could offer an opinion, he entirely agreed with the views placed before him by the members of the deputation. These are strong expressions, and the majority of people will think them entirely justified by facts; but it is nevertheless true that these same views have been urged by a few persons for a great number of years, and that so far they do not appear to have met with a degree of acceptance at all commensurate either with their truth or with their importance. The case has too often been like that of the diversity of screws, but with no Whitworth to suggest the happy mean by which individual claims or pretentions could be reconciled. Every designer has been wishful to have 'his own' pattern of some appliance in general, or perhaps universal, demand—a pattern a little thicker or a little thinner than that usually employed, and perhaps only representing a maximum of cost in combination with a minimum of advantage.

"A variety of circumstances, however, have lately combined to force the question of standardization upon British engineers and mechanics, foremost among them being the recent discussion as to the supply of locomotives to Indian railways and the enormous demand which has lately arisen for various kinds of electrical machinery. The merit of perceiving and of acting upon the favorable opportunity is largely attributable to Sir John Wolfe-Barry, whose plea for reform has been taken up by the Institution of Civil Engineers, with the co-operation of the Institution of Mechanical Engineers, the Institution of Naval Architects and the Iron and Steel Institute, and has led to the formation of a very strong committee, comprising many of the most eminent names among the leading members of these bodies, with a recent addition of representatives from the Institution of Electrical Engineers. It follows that the movement is now being backed by all the leading technical societies of the country, and is being controlled by practical men who are in touch with the requirements of the engineering professions and trades. It may therefore be reasonably expected to be marked by a sufficient flexibility of adaptation to altered circumstances, so that the opposite errors of too great readiness to discard the old and of too great reluctance to adopt the new may both be effectually guarded against. It would be quite possible, of course, to erect an undue worship of standardization into a barrier against improvement, or against the adoption of modifications which the real needs of actual or potential customers might require; but any such danger appears to be much diminished by the lines on which the committee and its subcommittees have been constituted. It is a matter for great congratulation that the principal manufacturing or purchasing departments of the government should be brought into touch with the movement, so that these departments when placing their contracts may recognize the standards laid down by the committees. There is much reason to believe that the war office and the admiralty have in past times done a good deal to hinder the progress of manufacture by an obstinate adherence to methods or to demands which might with advantage have been suffered to become obsolete, and which would have been greatly modified in dealing with any private consumer. The more completely the spending departments can be brought into touch with ordinary requirements the better it will be alike for the manufacturer and for the taxpayer; and the more hearty the co-operation of the government with the movement which has elicited from Mr. Balfour expressions of cordial approval; the more rapidly will the pessimists among us be relieved of the anxiety concerning foreign competition which they have lately had some ground both for feeling and for expressing. The British empire has conducted a great war to a triumphant issue, and its sons must now gird themselves for equal efforts in the competitions of peace."

ENGLISH AND AMERICAN RAILWAY RATES.

The following letter in the London Times from Mr. George S. Gibb, general manager of the North Eastern railway, upon English and American railroad rates, will prove very interesting as it is at variance with the prevailing opinion upon this subject:

"Will you let me prick a bubble in your columns? At least, I think it is a bubble. American railroad rates, people say, are lower than English railroad rates. That the average rate per ton per mile for all goods traffic carried on American railroads is lower than the average rate on English railroads is indisputable. But this general and true statement is converted in many minds into an incorrect belief that English railroads charge more for services they actually perform than American railroads charge for similar services. The average rate per ton per mile on all traffic carried is a misleading figure. If one is in search of bare truth, one must examine the component parts of the average. The American average is reduced by the inclusion of rates on large quantities carried for very long distances, a kind of traffic that does not exist in England in proportions large enough to affect the average. It must also be remembered that a large percentage of English rates include, whilst all American rates exclude, the services of collection and delivery.

"The only sound way to make a comparison is to take concrete instances, and to show by them what is charged on an English railroad for a specified quantity of any commodity carried for a specified distance, in comparison with the American railroad charge for a similar quantity of similar traffic carried for a similar distance. American traders send their traffic in large consignments; English traders do not. I have more than once asked individual traders whether a large-quantity rate would be useful to them, but have invariably been discouraged from further conversation by their replies. Yet the same people on festive occasions thump the table to the theme that the difference between English and American rates constitutes an oppression of English trade. The fact is, that for the quantities in which English traders actually consign their traffic, and for usual English distances, English rates are lower than American. It will give definite illustrations of my assertion, which I have carefully verified by personal investigation, and my illustrations will be drawn from one of the largest railroad corporations in the eastern states of America and from the North Eastern railway in England.

"The following table gives the rates per ton for conveyance of a consignment of five tons of the undermentioned articles (excluding collection and delivery), carried between two stations 42 miles from each other:

Article of Merchandise	American rate. s.	d.	English rate. s.	d.
Bricks (common)	12	2	4	6
Cement	8	5	5	10
Flour in sacks	7	6	6	8
Malt in bags	7	6	7	1
Oilcake	7	6	6	8
Potatoes in bags	8	5	6	8
Plates and bars (iron and steel)	8	5	5	0
Stone (rough) (building)	8	5	4	2
Ale	12	2	10	0

"These figures represent actual charges on the usual scale, not exceptional rates. I have selected a distance slightly in excess of the average haul for all goods traffic carried on the North Eastern railway, namely, 35½ miles, as I am anxious not to overstate the case, but the differences would have been more in favor of the English rates if shorter distances had been taken. For example, the rate for five tons of bricks on the American railroad for a distance of 21 miles is 8s. 5d., as against 2s. 9d. on the North Eastern. The list might be extended indefinitely, but it is better to make it short, clear, and definite."

The twin-screw steam yacht Arrow, owned by Charles R. Flint and built to attain a maximum speed of 40 miles an hour, beat the racer Monmouth of the Sandy Hook line in a race from New York to the Atlantic Highlands last Saturday. Over the course of 21 miles the Arrow beat the Monmouth just about eleven minutes. She had only one of her boilers coupled at the time. The Arrow's engines are quadruple-expansion and were designed by C. D. Mosher. They can develop 4,500 H.P. She has two water-tube boilers.

Vessels launched in the district of Bath during the first half of 1902 aggregate more than 17,000 tons gross.

SUMMER NAVAL MANEUVERS.

Plans are materializing for the naval movements which will precede the joint army and navy maneuvers. The arrangements have been placed in the hands of Rear Admiral Higginson, commanding the North Atlantic station, and he is expected to settle soon matters of general detail, such as the limits within which the enemy's ships may attack, the selection of a commander for the enemy's force and the selection of the ships which will compose the attacking squadron. An interesting part of the work in both sets of maneuvers will be that assigned to the umpires. Officers will be assigned to each of the ships in the naval maneuvers, and to both ships and fortifications in the joint exercises, to act as judges, and it is understood that the final decision in the greater maneuvers as to whether the army or the navy has been victorious will be rendered by a board of high ranking officers from both branches of the service, probably headed by Admiral Dewey. The task of the individual judges will not be an easy one, for the entire scheme of the exercises is to be based on probability. For instance, a battleship steams up past one of the Staten Island forts in the dead of night. A searchlight flashes out into the blackness from the fort, finds her, and the gunners ashore train their big weapons to blow her out of the water. Did the searchlight find her in time to have prevented deadly work if it had been real war? Were the guns in the fort trained on her with the requisite precision, or can she be considered as having run the gauntlet, and as flying up the bay to shell the metropolis? This is only a sample of what may be expected in the way of situations open to vigorous dispute from both sides.

As soon as Gen. MacArthur takes hold at New York it is expected that he will co-operate with Rear Admiral Higginson in drawing up a complete and definite plan for the games of war between the army and the navy, which begin the latter part of August. The plans for the joint maneuvers are lagging a little, owing to the fact that Gen. Brooke will turn over the command of the department of the east in a few days to Gen. MacArthur, and not until the latter takes hold of the arrangements for the army's part are the plans expected to take definite shape.

The battleships Kearsarge, Alabama and Massachusetts of the North Atlantic squadron, which have been laid up for repairs at the New York navy yard for some weeks, will be ready to put to sea this week. Rear Admiral Higginson will transfer his flag from the Olympia back to the Kearsarge, and the squadron will immediately begin active work in target practice, drills and evolutions, in order to increase its proficiency, and also with a view to fitting itself for the coming maneuvers. Lieut. Comd'r Niblack, inspector of naval target practice, is now in New York city making arrangements for that feature of the squadron's work. The cruiser Olympia left the Boston yard a day or two ago for New York, where it will be docked and undergo additional repairs, and then will join the other vessels of the squadron. The war game which the North Atlantic squadron will play this summer should give it somewhat of an advantage over the other squadrons which will be assembled at the great naval maneuvers in the Caribbean next winter.

RAILWAY MILEAGE PASSES 200,000 MARK.

The Railway Age publishes the following article upon the growth of railways in the United States:

The railway mileage of the United States has passed the 200,000-mile mark. The figures at the close of 1901 were approximately 199,525 miles, and the construction for the first six months of 1902 brings the total up to 201,839 miles, the track laid during the first half of this year on 155 lines aggregating 2,314 miles. This is nearly 500 miles in excess of the new mileage for the first six months of 1901, when 1,817 miles were built. The total for the twelve months last year was 5,222 miles, and if the same ratio is maintained this year it will readily be seen that the construction for the year 1902 will easily exceed 6,000 miles. Track-laying thus far this year has been distributed throughout forty-one states and territories, the following states reporting no new mileage, although lines are under construction in all of these with the exception of two or three New England states: New Hampshire, Massachusetts, Rhode Island, New Jersey, Delaware, Wyoming, Nevada and Idaho. The following table shows the details by states:

TRACKS LAID FROM JAN. 1 TO JUNE 1, 1902.

States.	Number lines.	Miles.	States.	Number lines.	Miles.
Alabama	2	21.32	Montana	2	52.68
Arizona	4	17.95	Nebraska	1	12.00
Arkansas	15	136.21	New Mexico	4	190.15
California	4	50.27	New York	5	30.80
Colorado	4	48.30	North Carolina	2	13.50
Connecticut	1	3.78	North Dakota	1	27.00
Florida	4	96.74	Ohio	3	16.70
Georgia	7	124.57	Oklahoma	7	211.00
Illinois	2	100.50	Oregon	2	10.00
Indiana	4	44.21	Pennsylyania	9	86.60
Indian territory	4	211.00	South Carolina	1	22.00
Iowa	4	61.05	South Dakota	1	3.20
Kansas	3	45.31	Tennessee	3	15.00
Kentucky	1	2.25	Texas	10	236.06
Louisiana	6	102.58	Utah	1	14.50
Maine	2	14.00	Vermont	1	3.00
Maryland	1	4.00	Virginia	2	8.00
Michigan	3	25.00	Washington	7	79.30
Minnesota	3	26.81	West Virginia	5	22.21
Mississippi	5	49.91	Wisconsin	1	10.00
Missouri	8	64.84			
Total in forty-one states and territories				155	2,314.30

Texas shows the largest new mileage, with 236 miles. Oklahoma and the Indian territory are tied for second place, with 211 miles each, and New Mexico is fourth with 190 miles. Other states showing 100 miles or over are: Arkansas, 136 miles; Georgia, 125 miles; Louisiana, 102 miles, and Illinois, 100 miles, Florida being near the 100-mile mark with ninety-seven miles to her credit.

While the new mileage is widely distributed, the greater portion of it is located in the southwest, the five states and territories of Arkansas, Texas, New Mexico, the Indian territory and Oklahoma territory contributing no less than 984 miles. The eight states and territories which are usually classed as southwestern states have built 1,143 miles of new line, which is nearly half of the mileage for the entire country. Other groupings are as follows: New England states, twenty-one miles; middle states, 121 miles; central northern states, 196 miles; South Atlantic states, 287 miles; gulf and Mississippi valley states, 191 miles; northwestern states, 183 miles; Pacific states, 172 miles. The states west of the Mississippi river have built 1,613 miles, and the states south of the Ohio and east of the Mississippi 380 miles, making a total of 1,993 miles of new lines completed in the states south of the Ohio and west of the Mississippi river.

While many of the large systems of the country are building important extensions, the majority of them have laid but little track so far, the first six months of the year having been devoted largely to surveying and grading. Notable exceptions are the Choctaw, Oklahoma & Gulf, which has completed 202 miles in Arkansas, Texas and the Indian and Oklahoma territories, and the St. Louis & San Francisco, which has laid 181 miles in the same states and territories. The Great Northern has built 122 miles in Montana, Washington and North Dakota; the Santa Fe system sixty-eight miles in Arizona, Oklahoma and the Indian territory; the Missouri Pacific sixty miles in Arkansas, Louisiana and Missouri; the International & Great Northern sixty-four miles in Texas; the El Paso & Rock Island fifty-six miles in New Mexico; the Seaboard Air Line forty-five miles in Florida, and the Southern Pacific (Atlantic system) forty-two miles in Texas. The large systems which are building extensions, but which have laid but little track so far, are the Rio Grande system, Chicago, Rock Island & Pacific, Chicago, Milwaukee & St. Paul, Burlington system, Northern Pacific, Southern, Louisville & Nashville, Chicago & Northwestern, Chesapeake & Ohio, Baltimore & Ohio, Norfolk & Western, Illinois Central, Missouri, Kansas & Texas, St. Louis Southwestern, Wabash and Oregon Short Line.

Two independent lines of importance now under construction are the San Pedro, Los Angeles & Salt Lake, which has laid twenty-two miles in California, and the Kansas City, Mexico & Orient, which has laid twenty miles in Kansas, as well as twenty-five miles in Mexico. Other independent new lines, or lines whose identity has not been fully disclosed, have laid track as follows: El Paso & Southwestern, ninety-seven miles in Arizona and New Mexico; Illinois Valley, 100 miles in Illinois; Arkansas & Choctaw, eighty miles in Indian territory; Ozark & Cherokee Central, forty-five miles in Arkansas and the Indian territory; St. Louis, Memphis & Southeastern (reported to be backed by the St. Louis & San Francisco), forty-three miles in Arkansas and Missouri; Iowa & St. Louis, twenty-four miles in Iowa and Missouri; Des Moines, Iowa Falls & Northern, twenty miles in Iowa.

The following table shows the building by years for the first six months and for the entire year since 1892, inclusive:

Year.	First Six Months.	Entire Year.	Year.	First Six Months.	Entire Year.
1892	1,367	4,178	1898	1,181	3,018
1893	1,014	2,635	1899	1,360	4,588
1894	525	1,948	1900	1,654	4,436
1895	641	1,728	1901	1,817	5,222
1896	788	1,848	1902	2,314	.....
1897	622	1,880			

The new mileage for this year embraced in our table does not include many logging and private roads which are being built for temporary use, but as large as the total is exclusive of such lines, it will undoubtedly be increased by returns from a number of companies which have not yet reported, but which have doubtless laid some track. The work of grading is being pushed on several thousand miles of new lines in various sections of the country, and track-laying is just commencing or will begin during July in many places. A good many lines report difficulty in securing rails, and this is the only thing that will prevent the completion of 6,000 miles or over of new road during the calendar year 1902.

MARCONI LECTURES ON WIRELESS TELEGRAPHY

Mr. Marconi gave a lecture lately before a crowded audience at the Royal Institution, London, on "The Progress of Electric Space Telegraphy." He said that it might be possible by means of his system to telegraph messages at a speed of several hundred words a minute. At present by means of this detector it was possible to read thirty words a minute. The Canadian government, on the initiation of Sir Wilfrid Laurier, had not only encouraged but welcomed the establishment of a station in Nova Scotia, and had granted a subsidy of £16,000 for the erection of the transatlantic station, the object of which was to communicate with England. Another station for the same purpose was being erected on the United States coast. Experiments from vessels had shown that messages were received from upwards of 1,551 miles from Cornwall, while indications were received as far as 2,099 miles. A result of great scientific interest was that at a distance of 700 miles the signals transmitted during the day failed entirely, while those sent at night remained quite strong up to 1,551 miles and the indications at 2,099 miles. He did not, however, think that the effect of daylight would be to confine the work of transatlantic telegraphing to the hours of darkness. Sufficient energy could be used during the daytime. He felt that the day was rapidly approaching when ships would be enabled to be put into communication with the shore across the ocean, and when those aboard ship would no longer be isolated in their information as to what was going on in the world. And what was of great importance was that the system would be found applicable for such great distances as divided Great Britain from her colonies and America.

Returns for the six months just ended show the production of all classes of manufactured iron in the north of England district to have been the smallest recorded in the history of the trade. The total was only 41,900 tons, compared with 46,206 tons for the same period of 1901, which was the previous worst half year. Compared with 1899 this year's output shows a diminution of 51 per cent.

The semi-annual report of shipping at the port of Hamburg has just been issued. It shows that 6,401 vessels arrived at Hamburg for the half year ended June 30, an increase over the same period of last year of 370. The total tonnage which entered the port in the specified time was 4,318,571, an increase over the first six months of 1901 of 159,260 tons.

SHIP BUILDING IN SCOTLAND.

SUMMARIES FOR THE HALF YEAR—THE SHIP BUILDING MATERIAL MARKET—OUTLOOK IN SCOTCH YARDS—NOT GREATLY IMPRESSED WITH PROPOSITIONS OF THE COMBINE.

Glasgow, July 10.—There has been rather a pause in the combine power since my last letter. No new prospect has jumped from the brain of some sensation-loving journalist with more wealth of imagination than knowledge of shipping. Your reports of Nixon's ship building combine are, however, read with interest, though with some surprise that the magnitude of it is so much exaggerated. The capital involved does not seem as large as in our own Vickers-Beardmore combine, which, again, is but one among a crowd. It is an error to claim that the United States Ship Building Co. will be the only concern in the world able to build and equip a battleship in every detail. The Armstrong-Whitworth Co. of Newcastle-on-Tyne have for many years been in that position—able to supply a complete warship from the iron ore, smelting their own pigs, casting their own steel, founding their own guns, and sending the biggest of modern warships straight away from their own quay to sea ready to engage an enemy in the offing, if need be. The Vickers-Beardmore combine are now in the same position, with the advantage of two ports of origin, the Clyde and Barrow. And as for general producing capacity, we produce on the Clyde alone (without taking into account the great English rivers at all) as much tonnage in a year as all the ship yards in the United States put together do, and that of the most perfect quality both as to hull and machinery.

In June the Scotch ship builders turned out twenty-six vessels of 47,896 tons, of which twenty-two vessels and 39,200 tons were on the Clyde, two vessels and 4,620 tons on the Tay, and one vessel of 4,000 tons on the Dee. This total compares with forty vessels and 59,250 tons in May, and with twenty-nine vessels and 47,000 tons in June, 1901. It brings up our total for six months ending June 30 to 259,800 tons, which is 13,000 tons ahead of our previous record, and that of the first half of 1901. I show the June and the half year output since 1890 for purpose of comparison.

HALF YEAR OUTPUT OF SCOTCH SHIP YARDS.

Year.	Month of June. Tons.	Six months ending June. Tons.	Year.	Month of June. Tons.	Six months ending June. Tons.
1890.....	33,670	209,670	1897.....	31,960	159,450
1891.....	43,470	191,000	1898.....	51,070	227,600
1892.....	38,430	210,890	1899.....	38,565	256,310
1893.....	27,900	132,690	1900.....	52,530	232,590
1894.....	40,700	183,490	1901.....	47,030	246,750
1895.....	45,500	191,880	1902.....	47,900	259,800
1896.....	28,350	201,290			

Of the June product one vessel was over 6,000 tons, two between 5,000 and 6,000 tons, three between 4,000 and 5,000 tons, four between 3,000 and 4,000 tons, four between 1,000 and 2,000 tons, and the rest under 1,000 tons each. Among the items were the twin-screw Sardinia of 6,850 tons and 3,500 I.H.P., built by Barclay, Curle & Co., Ltd., for the P. & O. Co.; the twin-screw California of 5,600 tons and 5,000 I.H.P., built by Caird & Co. for the Pacific Steam Navigation Co.; the single-screw cargo boat Kish of 5,500 tons and 2,300 I.H.P., built by Scott & Co. for the Clyde Shipping Co.; the twin-screw South Port of 4,300 tons, built by Napier & Miller for the Norfolk & North American Steam Shipping Co. of New York; the steamer Wyandra of 3,650 tons, built by Alexander Stephen & Sons for the Australian United Steam Navigation Co.; the spar-deck steamer Chlumeckey of 3,600 tons and 1,700 I.H.P., built by Russell & Co. for Austria; the screw steamer Bacchus of 3,100 tons, built by Robert Duncan & Co. for Greece; the Victoria of 3,000 tons and 3,500 I.H.P., built by Gourlar Bros. & Co., Dundee for Melbourne, Australia; the screw Runa of 1,600 tons, built by the Caledon Ship Building & Engineering Co., Dundee, for the Wilson line, Hull; the awning-deck steamer Taurus of 1,240 tons, built by the Campbelltown Ship Building Co. for Norway. There were a number of small coasters for the colonies and continent and a number of dredgers, hopper barges and fishing steamers for home and colonial ports. Of the tonnage launched 6,770 tons was for Australia, 1,400 tons for Natal, 210 tons for New Zealand, 3,580 tons for Austria, 3,100 tons for Greece, 1,240 tons for Norway, and the rest for British owners.

This large half-year output has necessarily reduced the amount of work on hand, but orders have been coming in more freely during the second quarter than during the first quarter. And more contracts have been booked than have been reported. I estimate that Scotch builders still have on hand orders for about 400,000 tons of new shipping, not including what is already in the water in various stages of completion but just what is on the stocks or is being made ready to lay down. The new admiralty contracts account for nearly 50,000 tons and some big liners have been arranged for without any advertisement. The comparatively low price is also tempting owners of cargo boats to place orders on the quiet, in the hope that the freight markets will have improved before anything now being contracted for can be ready for service. This week, for instance, an order has been placed for a 6,000-ton "tramp" at a price that will work out at somewhere about £6 10s. per ton. I need scarcely say that this is a very low figure compared to what has been paid during the last two or three years.

CONDITION OF SHIP BUILDING MATERIAL MARKET.

Ship builders are not getting much relief in their wage bills, but all material is lower and there is an expectation of still lower prices. Steel ship plates are quoted here £5 17s. 6d., less 5 per cent., and in the north of England £5 15s., less 2½ per cent., but I doubt if any builder has actually paid these figures and I hear of sales appreciably under them. Prices of iron and steel material would undoubtedly be lower but for the firmness of pig iron caused by conditions in the United States. Our stocks of crude iron are now very low indeed and there is always before the market the possibility of the whole of these stocks—or such portion of them as may be procurable—being shipped off to America, leaving our warrant yards in the condition of the cupboard of our old friend Mother Hubbard. In such circumstances smelters are naturally very firm in their ideas, and they also have no stocks, sending all their weekly outputs direct into consumption. Pig iron is going across from Glasgow to the United States by liners every week, and in occasional full cargoes from the Tees. A day or two ago an order for 4,000 tons Scotch foundry iron was booked here for prompt shipment to America and another for 3,500 tons Cleveland iron for shipment from Middlesboro. I also hear of a sale of 5,000 tons of Cumberland hemetite for shipment, via Glasgow, if direct freight cannot be got from one of the small Cumberland ports, and of one of 3,000 tons Scotch steel billets, all for your side. These instances by no means constitute the whole of the movement in iron and steel westward from us; they are only named as examples within the last few days of what is going. And so long as they are going on it is not likely that our markets will react. But as soon as the pressure in America eases off, I think we shall see a decline in ship building material here, and it is upon the probable decline during the last six months of the year that ship owners and ship builders seem to be now acting. As it is, our ship yards are already provided with a fair amount of work to carry them over the winter, although at the moment there are fewer men employed than at this time last year. Next week the Clyde yards will prepare to shut down for the annual "fair holidays," whose duration depends both on the state of the men's exchequer and on the state of the employer's order book. It is usually about a week, but sometimes is spun into a fortnight and the interregnum is utilized for general overhaul and repairs in the workshops.

To the above named output of Scotch ship yards in June must be added the output of the English yards, estimated at 44,000 tons (as compared with 76,800 tons in June last), from which it will be seen that the English yards are not nearly so well employed as those in Scotland. The Irish output was only 3,000 tons, as compared with 12,000 tons in the corresponding month. The output of all the yards in the United Kingdom in the six months ending June 30 last was about 670,000 tons, as compared with 725,000 tons in the first half of 1901 and with 610,000 tons in the first half of 1900.

The Wyandra, mentioned above among the June products, is a steamer built by Alexander Stephen & Sons with special designs for the inter-colonial trade of the Australian United Steam Navigation Co. of Melbourne. She is 350 ft. in length, 46 ft. in breadth and is of 3,650 tons. Accommodation for 200 first-class and 150 second-class passengers is provided on three decks. There is a combined poop and bridge deck, 250 ft. long, on which are special deck cabins, and a promenade deck overhead on which are officers' cabins. At each hatch are hydraulic cranes of rapid and noiseless motion, and the machinery for steering gear, warping gears, etc., is of steam.

NOT DEEPLY IMPRESSED WITH THE COMBINE'S PROPOSITIONS.

Shipping men here are not deeply impressed with the evidence given by Mr. W. J. Pirrie of Harland & Wolff and the White Star line before a select committee on shipping subsidies, a summary of which has doubtless been cabled to your side. According to Mr. Pirrie the Morgan combine has been established "purely for commercial purposes and on business principles," which is precisely what everybody (except a few hysterical London newspapers and the people who take their opinions from them) have all along taken for granted. Mr. Pirrie also says that the deal is "in every way satisfactory to the English companies," which it is not difficult to believe, seeing that they have got for their property about five times its market value. But he doth protest too much when he tries to convince the committee and the public that by the establishment of the "community of interests" the British national shipping and ship building industries will be placed in a more secure position than before. People feel that in this connection it would be better for both Mr. Morgan and Mr. Pirrie to drop the patriotic and national lay. The deal has been negotiated by each in his own interests, and in the interests he manages, and there is no need to gloss over anything. As for Mr. Morgan's offer to contract with the admiralty that none of the British vessels in the combine shall for fifty years be transferred to a foreign registry without the written consent of the president of the board of trade, and that all ships built in Britain for the combine during that period shall be held at the disposal of the admiralty, either for cruisers or transports, on the same terms as those that may be accorded to other British owners—well we do smile. It would be interesting to know how much Mr. Pirrie himself would offer for such a contract were it put up to auction. It tickles the noses of the newspaper men who cannot see beyond the end of those organs, but it is only froth and flummery. Is the Morgan Combine worth five, not fifty years', purchase?

Pittsburg offices of Westinghouse, Church, Kerr & Co. have been removed from the first floor of the Westinghouse building to more commodious quarters on the eighth floor of the same building. This change is the direct outcome of largely increased business in the district. This company is prepared to give immediate attention to all classes of general engineering and construction work as applied to power and its uses in transportation and industry. They will provide in all cases from their engineering force adequate personal supervision of work in hand, both during construction and subsequent thereto, and the increased facilities afforded by their new quarters will enable them to fulfill the most extensive contracts. The official address is Westinghouse, Church, Kerr & Co., Westinghouse building, Pittsburg.

In attempting to enter the harbor at Christiania, Norway, the battleship Illinois struck the bottom and will have to go into dry dock in England. It appears that while the Illinois was standing into the harbor, leading her squadron, her steering gear failed and her helm jammed hard to starboard with the ship headed straight for the shore. Both anchors were let go and her engines backed promptly, but the port anchor chain parted. The ship struck bottom and two small compartments were filled with water. She eventually backed off and anchored safely. It is likely that Rear Admiral Crowninshield will transfer his flag to the cruiser Chicago.

Mr. C. E. Walker, who has for a number of years been connected with the Marine Review, and who is at present its advertising representative in Chicago, has secured an interest in the American Jeweler, a Chicago monthly publication. He will assume the business management of the American Jeweler. As Mr. Walker's experience in trade journalism is extensive the American Jeweler cannot help but be strengthend by his intimate connection with it.

OUR FOREIGN CARRYING TRADE.

By WILLIAM W. BATES, Former Commissioner of Navigation.*

Of the various subjects coming before the country few have had less tendency to divide opinions than the principle of American shipping for the carriage of American commerce. For many years after the formation of the more perfect union of the states, commerce and navigation were regarded as two of the four pillars of our prosperity. We have so many industries now, these grand old and reliable occupations draw lessened attention, but they remain and must always constitute essential pillars of national prestige and power. The advantages and benefits of maritime pursuits are numerous and important. Only a mere allusion can be made here. They may be grouped under five general heads: One, the industrial; two, the commercial; three, the financial; four, the political; and five, the military. These interests harmonize with all others of importance to the nation. Their principle is, that we should carry on our own commerce and navigation, do our own ship building, underwriting and banking, and pursue as we may see fit every business or calling related to the sea; that we should develop on the ocean as upon the continent, and become the equal of any nation on the earth.

Once we were rightly started and well along in accomplishing this purpose. Beginning with 20 per cent. of proportionate carriage in 1789, in a few years our vessels were carrying from 80 to 90 per cent. of our exports and imports and so continued, the culmination occurring in 1826, when the figures stood, for exports, 89.6 per cent.; for imports, 95 per cent. This was under regulations which purposely favored our own shipping for our own trade.

A change of policy was introduced; our marine was given less preference at the custom house, when different causes quickly produced different effects. Later, a complete and radical change was effected and no preference was given. By 1861 export carriage had fallen to 72.1 per cent.; import carriage to 60 per cent. By the close of the civil war the figures were down to 26.1 and 29.9 for export and import carriage, respectively. The war was damaging, but peace showed little recuperative power. In 1870, the percentage reached 37.7 for export, and 33.1 for import carriage, but has declined since. In 1891 it stood at 6.13 for export carriage, and 11.99 for import. Once, our shipping carried 75 per cent. of our commerce with Europe. Of late, it fluctuates above and below 2 per cent. There are many ports in Europe, as in other parts, where an American ship is never seen, while last year the number of nations participating in our foreign trade was twenty-five, every one of them accorded the same port privileges as ourselves.

The name for the policy under which foreign shipping has displaced our own is a misnomer—to us. How little reciprocity there is about it may thus be seen. In 1900, in the trade between our country and Europe, not one American merchant vessel went to or came from Germany, Russia, Sweden, Norway, Denmark, Holland, Italy, Austria-Hungary, Greece or Turkey. Two small American vessels came from France, one in ballast; one came from Belgium in ballast, and one cleared for Spain. There were cleared for or entered from England eleven sailing vessels, while two small steamers went in ballast. The American mail steamships St. Louis, St. Paul and New York made their accustomed trips, sustained by subsidy. A policy responsible for such results—and this fact is demonstrable—deserves an instant reversal. Its only use appears to be to serve as a standing plea for government aid—subsidy—a beggarly remedy. Certain foreign nations have found it of advantage and deserved to, as they originated it. They may think we deserve something, too, for being drawn into their schemes.

OUR FIRST SHIPPING POLICY.

Shortly after the peace of 1783 an event occurred which excited our people from north to south. This was an order in council of the British government closing to American vessels the ports of its North American colonies and islands, and suppressing all commerce with them except by British vessels. At that time each state made shipping laws for itself. The congress of the American confederation appointed a committee, with Mr. Jefferson as chairman, to consider and report some measure to fit the case. This resulted in a proposition to ask the states for power to pass and enforce a general navigation law. Consent in proper shape was not obtainable. A proposition that the congress be empowered to pass an impost act had a similar experience. A new general government, with definite powers, was thus shown to be a necessity. A league of maritime states, without a general government, a common revenue system and a merchant marine, could not become respected as an independent power. Daniel Webster well said: "Maritime defence, commercial regulations and national revenue were laid at the foundation of our national compact. They are its leading principles and causes of its existence. They were primary considerations, not only with the convention which framed the constitution, but also with the people when they adopted it. They were the objects, and the only important objects, to which the states were confessedly incompetent. To effect these by the means of the national government was the constant, the exhaustless topic of those who favored the adoption of the constitution."

Only two of the enumerated powers granted in the constitution—the power to raise revenue and to borrow money—precedes the power to regulate foreign commerce, so as to develop an American marine. Properly equipped with power, the federal congress applied it to our carrying trade in the very first act for the relief of the country, the tariff bill of 1789. By subsequent acts a simple system of ship encouragement was perfected. The principle employed was preference for national vessels in the carriage of our own commerce. This preference was created by discriminating duties of tariff and of tonnage. The effects were immediate and satisfactory—in the United States. In England, however, there was resentment. A republican power must not be admitted to rivalry on the ocean; means of prevention must be found.

Our first commercial treaty was with France, in 1778. It contained what are known as "favored nation" clauses, by which we are not to use discriminating duties to favor any foreign nation. It was abrogated by congress on the eve of war in 1798. The peace treaty of 1800 contained a like stipulation. In March, 1783, England attempted to forestall any action of our states or of congress, in passing navigation laws applicable to British shipping. Under the famous navigation act, all European nations might enter British ports carrying their own productions in their own vessels. It would need a special act to extend this privilege to the United States. Accordingly, Mr. Pitt introduced a bill by which our vessels might carry our productions not only to England, but might also trade to the West Indies, bringing back any goods whatever, subject to the same duties and charges payable by British subjects and British vessels, on condition of reciprocation. To this measure the British shipping interest made "a violent opposition," and it was laid aside. It was contended that our government was too feeble to protect its shipping interest; it were best to allow no equality whereby we might acquire the means of rivalry. By an order in council, renewed yearly, we were permitted to trade with home ports. In 1785 John Adams endeavored in vain to get some relaxation in favor of West Indian trade. No commercial treaty could be made. The ministry would not treat with thirteen different states. Studying the subject, our statesmen determined to improve our general government and one day assert their rights upon the ocean.

The present government was formed and we became a nation in 1789. Congress encouraged our commerce and navigation, and these interests prospered. The war declared against the French in 1793 gave the British a chance and an excuse to obstruct and to harass our navigation. Evidence of its success was very distasteful in London. The headway of the "starred flag" at sea was "becoming abominable." Something should be done about it. Consequently our seamen were impressed and the voyages of our vessels broken up wherever convenient. Congress took the matter up and some drastic regulations were likely to be carried, when the British minister invited diplomatic action. Judge Jay went to London and the "Jay treaty" was made. The British embraced this chance to nullify our power to apply discriminating duties in favor of our shipping in our commerce—with them. We were not to take our duties off, but to allow them to countervail at discretion, while we were not to increase our duties in the least. They soon availed of their advantage, but being at war, and we being neutral, our loss was not felt until the peace of Amiens—1801-1802. Meanwhile British shipping got less advantage than was expected, and in 1802 parliament passed an act for partial reciprocity, hoping to get our discriminating duties removed by act of congress. A member from Maryland brought forward a resolution to this effect, got it before his own committee, but remonstrances from our commercial cities defeated the scheme. In 1804 congress passed an act charging foreign vessels "light dues" of 50 cents a ton, adding largely to our protective system. This did not infringe the treaty, but made the British more than ever determined to make us quit regulating our trade. In 1806 a new treaty was drawn up in London, which contained articles for reciprocity, but was so one-sided that the president returned it.

OUR FIRST MARITIME RECIPROCITY CONVENTION.

Our history of the war of 1812 is well known. It was persistently provoked by our enemy, who expected to make it an occasion when our flag would disappear at sea. In place of disappearing it was glorified. England wearied of the war, but held to her resolution to make no peace that did not provide for clearing away our discriminating duties—the encouragement that had so wonderfully given us naval strength. We had better have denied her then and there, in defiance of consequences; but the treaty of peace was made, with an understanding that a commercial convention should follow its ratification. Three of the five statesmen who acted as our commissioners for the treaty of peace acted also in making the convention. It was expected that this negotiation would settle the questions of the "right of search," of the rights of our ships and seamen and our right to carry our products in our own vessels to British West India ports. In these matters we were disappointed. The British wanted our ship protection removed, and had their way. Our commissioners got the term as short as possible—four years. For this convention congress passed an act:

"That so much of the several acts imposing duties on the tonnage of ships and vessels, and on goods, wares and merchandise imported into the United States, as imposes a discriminating duty on tonnage between foreign vessels and vessels of the United States, and between goods imported into the United States in foreign vessels and vessels of the United States, be and the same are hereby repealed; such repeal to take effect in favor of foreign nations whenever the president of the United States shall be satisfied that the discriminating or countervailing duties of such foreign nation, so far as they operate to the disadvantage of the United States, have been abolished." (March 3, 1815.)

On our part the object of this act was peace; on the part of Great Britain it was the removal of protection from American vessels. These used to bring our imports, and, doing so, could carry exports the cheaper. The law and the convention tended to shift the carriage of imports to foreign vessels and to enable them to carry exports the cheaper. A British writer has boasted that "England has always contrived to obtain the chief advantages" from her reciprocity treaties and conventions.

CONVENTION TO REGULATE COMMERCE AND NAVIGATION.

(*Abstract of Contents.*)

Article I. Freedom of commerce and navigation between the territories of the United States of America and all the territories of the King of England in Europe—not elsewhere.

Article II. No discriminating duties on imports and exports, the growth, produce or manufacture of the United States or of the British territories—in Europe. No discriminating duties on vessels of contracting parties in American ports or in British European ports. The same duties on articles imported, the growth, produce or manufacture of contracting parties either in the United States or British territories in Europe, whether carried by American or British vessels. The same duties or bounties on articles exported, the growth, produce or manufacture of contracting parties in the United States or in Europe, whether carried by American or British vessels. Drawbacks to be treated with respect to vessels the same as duties or bounties, except that when re-exportation shall be to foreign nations. Intercourse with the British West Indies and

*Address delivered before the Home Market Club, Boston.

North American continental possessions not to be affected by this article. (Our vessels forbidden to trade there.)

Article III. American vessels permitted to carry on commerce between the principal settlements of the British East Indies and the United States, where cargoes must be landed. The East India coasting trade and carriage to foreign countries reserved. No equality in tonnage duties—our vessels to pay the same as other foreign. Our vessels permitted to touch for refreshment, but not for commerce, at the Cape of Good Hope or St. Helena.

Article IV. Each of the contracting parties may appoint consuls, subject to approval in the usual way, but exceptions of consular residence may be made as either party sees fit.

Article V. Duration of convention—four years. No provision for renewal. (London, July 3, 1815.)

This convention gave us nothing new, but equal footing at the custom house, in direct trade between our own and British European ports. The indirect trade remained as before, British vessels could not bring goods to us from foreign territories, and we still retained some ship protection, even as to England. It left our indirect trade with all nations to our own ships, or to those of the country producing the cargo. Out of more than eighty countries and communities in the world, only about one-quarter sail ships in foreign trade. This plan of reciprocity therefore applied to the navigating nations alone. It was devised for us, with reference to British interest, the chief inducement being colonial reciprocity. As that was withheld, the only compensation lay in the shortness of the term. The British meant to get this extended; our people purposed no extension while West India ports were closed. Our act for this convention was rushed through near the close of a short session, almost without debate. In the next congress, on the suggestion of the president, a navigation bill, and one for non-intercourse, were introduced. These bills looked to curing the defects of the convention, particularly to keeping British ships out of indirect trade, to reserving our domestic trade, and to opening the British West India ports. The navigation bill was passed in 1817, the non-intercourse bill in 1818, supplemented by another in 1820. The latter acts closed our ports to vessels coming from places which were closed to our vessels. Our vessel interest was now suffering from "liberality;" British vessels were getting away their work.

EXTENSIONS OF CONVENTION TIME.

While our people were joyful that the convention would soon terminate, word came that, in order to get fair terms in treaties then under negotiation relating to the fisheries, boundaries, etc., our commissioners at London had agreed on ten years' extension of the convention. In like manner, in 1827, we were negotiating two conventions in London, one relative to territory on the northwest coast, and another providing for submission to arbitration of the northwest boundary dispute. Again our vessel interest was thrown into the scale for good weight to please the British. A separate convention was made, continuing in force the agreement of July 3, 1815. The second article reads thus:

"It shall be competent, however, to either of the contracting parties, in case either should think fit, at any time after the expiration of the said ten years. that is, after the 20th of October, 1828, on giving due notice of twelve months to the other contracting party, to annul and abrogate this convention; and it shall, in such case, be accordingly entirely annulled and abrogated after the expiration of the said term of notice."

In six years the reciprocity of 1815 was extended on request to the Netherlands, Sweden, Prussia, and the cities of Hamburg, Bremen, Lubec and Oldenburg. Vessel arrivals the first three years show that American navigation gained a trifle, British navigation was suffering from our acts of 1818-20, Dutch navigation fell off a little, but the other flags gained largely.

In 1821 Norway proposed full reciprocity. An account of this was given congress by President Monroe. By an ordinance the ports of Norway were opened to vessels of the United States, upon the payment of no other or higher duties than were paid by Norwegian vessels, from whatever place arriving and with whatever articles laden. Our act of March, 1815, not contemplating the scope of this proposal, it was for congress to consider. In its wisdom congress took no action.

EFFECTS OF THE NON-INTERCOURSE ACT.

This act, passed in 1818, by a vote of 31 to 2 in the senate, and 123 to 16 in the house, was styled "An Act Concerning Navigation." It closed our ports to British vessels coming from British places which were closed to American vessels. British vessels departing had to give bonds not to land cargo in any port closed to our ships. The effect was to cut down British arrivals at our ports from 174,935 tons in 1817 to 36,333 tons in 1819, and to 47,365 tons in 1820. Arrivals of American tonnage ceased to fall off and soon gained with increased employment. The British advantages from the convention were immediately nullified. On June 24, 1822, the British parliament passed an act naming conditions on which British closed ports would be opened. Thereupon the president opened our ports until congress should have time to consider the matter. A limited direct trade was offered, but England herself was to enjoy unlimited intercourse. Congress would not accept the proffer, but the president was given power to suspend our acts on condition of a just reciprocity. The British did not take kindly to our responsive act of 1823—they thought it their business to dictate terms. Meanwhile an open trade continued. An attempt at negotiation failed. The British, dissatisfied with their own terms, made new ones in an act of parliament of July 5, 1825. By this we were to adopt the scheme of Norway and allow British vessels to come to our ports from every quarter of the globe with cargoes of every sort, the products of every nation; then they would allow us to go with certain enumerated articles of our produce direct to the colonies, and thence to any foreign country except British dominions, and thence back to the states. With all this only a few colonial ports were opened, no discriminating duties were to exist, the act to take effect Jan. 1, 1826; if not accepted then the open ports would be re-closed. We did not yield, and Dec. 1, 1826, the re-closing followed. In March, 1827, the president put our acts of 1818 and 1820 into force again.

OUR SECOND, THIRD AND LAST ACTS FOR RECIPROCITY.

We have given the reciprocity act of 1815. This was repealed by an act of March 3, 1819, to take effect Jan. 1, 1824, after which date no more conventions would be made. But the West India question being unsettled, the congress of 1823-24 passed a new act, renewing in amended form the act of 1815. This was a false step. Our shipping interest was not consulted.

In 1825 John Quincy Adams became president. He had headed our commission for the treaty of peace in 1814, and for the convention of 1815, and was ambitious to effect a diplomatic settlement of the pending West India question. What he needed was an "olive branch" for England. He knew that the British act of 1825 required permission for British vessels to enter our ports from those of every country on the globe, with cargoes, the fruits of the industry of every people. He knew that "reciprocity" with the states, as Britain wanted it, was a scheme to defeat our competition, and that in 1824 she had passed acts for reciprocity with Prussia and other powers. He would make a virtue of necessity—he would sacrifice something to make his point. We had for years, in common with most shipping nations, reserved the indirect commerce and navigation. This reservation was perfect protection in our intercourse with many countries, particularly in export trade. Huskisson saw the importance of doing away with this protection. Adams did not comprehend the advantage in retaining it. In his first message he proposed its removal. A bill was introduced, discussed and laid over, but in 1828 was passed, authorizing the president to make agreements for full and complete reciprocity with all foreign nations. But the British would not treat after all; they desired to receive the boon, but disdained to grant it. The West India question went over to president Jackson; our minister got points for a bill which was passed in 1830, and we had no more port-opening deals until 1849, when, the British having revised their navigation laws, we admitted their vessels as under the act of 1828. But they never treated under it. More than half their intercourse stands today upon no agreement whatever.

CONSEQUENCES OF THE ACT OF 1828.

When this act was first proposed our proportionate carrying had culminated. From that day to this the average tendency has been downward. For years after its passage our tonnage as well as carriage decreased. In 1828 we had in foreign trade 757,998 tons; but in 1830 and 1831 the figures were 537,563 and 538,136 tons. On the other hand, in 1830 British shipping entering our ports measured 78,947 tons. For ten years previously the average had been 76,518 tons. In the next year after reciprocity—1831—British entrances rose to 143,806 tons; and for the first ten years thereafter the average number was 212,661 tons, or 63 per cent. of all the foreign arrivals. In this decade, while our own tonnage gained 40 per cent. in all the ports of the world, British tonnage increased nearly 400 per cent. in American ports alone. And this in the days of wooden sailing ships.

Mr. Bates here presents a table intended to show our shipping experience under opposite policies—the period before adoption of reciprocity (1789-1815), the period from partial reciprocity to full (1815-1828), and the period after full reciprocity (1828-1901). Our foreign trade shipping is noted for each year since 1879. Dates of different treaties and conventions for reciprocity are also noted, with terms and other particulars, and there is added a column showing for each year proportion of our carriage in foreign trade. This table shows, Mr. Bates says, that the constant average decline in carrying originated after our reciprocity conventions took effect, and has continued with the extension of competition by foreign shipping thus encouraged, ever since. He then continues as follows:

In eighty-seven years we have made agreements with forty-two different countries. We have such agreements now with twenty-three countries. There have been fourteen agreements terminated by eleven foreign nations. Where reciprocity articles have been put into treaties proper, they generally stand for a term of years, subject thereafter to notice and abrogation. In nearly all other cases the treaty as a whole may be terminated by notice. The reciprocity in British colonies, except as to the East Indies, stands upon statute law—repealable. There is no convention for full reciprocity with Great Britain.

THE GAINERS BY OUR LOSS OF CARRIAGE.

It has been shown that our carriage culminated in 1825-26. Up to this time only three nations—Great Britain, Sweden-Norway and France—had reciprocity agreements, and the Netherlands had an act which affected the direct trade only. In 1815, 1816 and 1817 British arrivals increased greatly, threatening a larger loss of American carriage; but our acts of 1818-20 cut down British arrivals materially. The other reciprocators gave us little competition before our carriage culminated. Our damaging competition came from the British in the beginning and after 1829; and the advantage of partial reciprocity, for a few years, was more than offset by our acts of 1818-20. It was after the act for full reciprocity and the opening of ports, mutually, with England in 1830, that we may fix the point of permanent decline of our carriage. The figures of proportionate arrivals corroborate this.

It is shown by these proportionate carriage records that our percentage in 1830 was 93.6 for imports, 86.3 for exports. Ten years afterward, with eighteen countries cutting into our carrying trade, the figures were down to 86.6 for imports, to 79.9 for exports; in 1850 we had reciprocity with twenty-five countries, and the figures lowered—77.8 for imports, 65.5 for exports. At the opening of the civil war, 1861, discriminating duties nearly all suspended—the figures stood at 60 for imports and 72.1 for exports—the latter raised from efforts of merchants to get cargoes out of the country. Thus, in thirty-five years, our average loss of carriage had been, for imports 1 per cent., for exports half of 1 per cent. annually. Unaware of these facts, speculative persons have attributed the loss of our carrying trade to our use of wooden sailing ships, to the British use of iron steamers, and to the high tariff since 1861, but our decline was well under way before the day of iron ships or the use of steamers, and many years before the war.

THE IMPOLICY OF RECIPROCITY.

One great failing of reciprocity has been that it presumed to equalize footing in navigation, but did not. It equalized footing-in-law at the custom house, but there is a footing-in-fact that it never touched and cannot lay hands on. It was our footing-in-law that we depended on to equalize footing-in-fact. Removing it and tying up congress, it was open to foreign nations to improve their footing-in-fact by all sorts of protections that did not spring from the government—even some that did so spring—subsidy, for instance. Not a single shipping nation is now de-

pending upon reciprocity, which is simply non-protection at the custom house, but all are applying footing-in-fact protections, making it impossible for a nation not resorting to these "aids" or instrumentalities, or to regulations of trade, to hold its own in competition.

In the Protectionist magazine for February, 1902, the writer demonstrated that the constitution of the United States provided congress with power to regulate commerce in the interest of navigation, but did not provide authority to tax the country for subsidy support to the freighting marine. The logic of our situation is, therefore, to return to our early policy under the power of the constitution, but if we adhere to reciprocity this cannot be done. Citizens preferring "aid" from the treasury to trade regulations tell us we must stick to reciprocity. This we can do, but the constitution bars the "aid." Reciprocity is perfectly useless to us, the constitutional course is the only one, if we want an adequate marine.

It has been a fine argument for subsidy support that "treaties stand in the way" of resuming our early policy. We have shown already that one-fourth of the countries with which we made maritime reciprocity agreements, for a limited time, have freed themselves of their obligations in a legal manner. We were not offended. Every nation profiting from our diplomatic bonds would doubtless be pleased with their continuance, but our first duty is to the interest of our own people. Under our constitution and under our practice the power of congress to supersede treaties and conventions by enactments is indisputable.

That our true policy is the regulation of our commerce is beyond question. We have but two treaties in which reciprocity is not limited by time—those with Liberia and Argentina. Last year only one sail vessel of the Argentina flag entered one of our ports and paid $17.97 in tonnage tax, and no vessel of the Liberian flag entered. Under the discriminating duties bill, which I have drawn for the consideration of congress, vessels coming from their own countries, with their own country's productions, would not pay such duty. This provision will avoid friction with many countries, and much reduce it with all countries. Our conventions have all exceeded their time and may all be terminated under their own provisions in one year. We once had a convention for commercial reciprocity with Canada. We terminated it lawfully. No difficulty followed. Be it remembered, we were twenty-six years without a single agreement for maritime reciprocity. In that time we produced our early marine, the equal of any in the world. We agreed with Great Britain not to exercise the power of congress for the regulation of our commerce, and consequently our shipping in the foreign trade has been swept away. If we will not now annul this and like agreements and reverse our policy, as the world can see, we must love subordination and subservience to British power."

IMPROBABILITY OF RETALIATION.

It has been objected that retaliation awaits us the moment we take proper means to regain our place at sea; that subsidies would be tolerated, but regulations of commerce would be resented. While this has been used as an argument for government aid, its force lies chiefly in the cowardice from which it springs. This argument has many times been urged against the enactment of high tariff rates, but has never been effective in fixing low rates. It should have no influence whatever in respect to shipping. There is no nation that can afford to say to the United States: "Your constitution authorizes congress to regulate foreign commerce, so as to encourage the possession of an American marine, but if this power shall be exercised we will retaliate and resist your measures with all our might." In what would justification be found? Look out upon the sea. Are there any flags there, but our own, unprotected? Has not every nation, whose government or people think its marine in need of encouragement, taken such steps as it is believed will secure its continuance on the ocean? The nations now paying bounties will one day give them up—probably in the first war which they have, if their taxpayers do not sooner object. When this happens, regulations of trade will follow.

But England—what of England? Will she ever consent to our encouragement of navigation by proper means? If she must she will. The relations of the two nations have greatly changed. We now feed England. She must continue her food dependence. She must have our cotton also. She may bluster, but she will restrain the "dogs of war." Why should England longer strive to curb and cramp American shipping power? She knows that if we are true to ourselves she cannot. Our developed resources have made our friendship too valuable to be rejected. Why should England, having a most effective system of ship protection, complain of us for a few regulations in the interest of our own marine? Before attacking us, will she not consider if she has the justification? Let us recapitulate her system:

1. An efficient steam mail subsidy policy, for intercourse with the world in British ships.
2. A naval reserve subvention policy in support of steam lines for the engrossment of British commerce with the United States.
3. Lloyds discriminative ship inspection, prejudicial to foreign vessels, particularly if foreign built.
4. British insurance discrimination on hulls and cargoes, thus compelling the employment of British ships.
5. Lloyds discriminative loading rules enforced by the board of trade—lightest loading to foreign ships not built by Lloyds rules, though they may be stronger.
6. A discriminative chartering policy observed by merchants and shippers—only British ships taken for standard, foreign flags having to accept lower rates of freight and pay higher insurance on cargo—in disregard of the rights of foreign nations under reciprocity conventions for "free freighting."
7. Discriminative "exchange" rules requiring certain cargoes to be British insured to be "regular" in sales, thus giving the control of charters to British underwriters, which is about the same thing as refusing charters to foreign, but particularly American ships.
8. Trade custom—to pay higher prices in British markets for cargoes by British ships.
9. Adverse co-operation of British steamship and American railroad interests—the latter sometimes carrying at cost—the former intent on engrossing the carriage to England.
10. Rings and combinations of ship owners, merchants and underwriters, linked in mutual self-interest to control the trade and transportation of the United States with the world. A part of their plan is to mislead our congress into subsidy legislation as the best—for them.

From this array of protective expedients it appears that England has retaliated in advance, on any nation ambitious to follow the sea. Who then will say the time for self-defence has not yet come? We find ourselves under a false policy, imposed by foreign influence, that has operated to create dependency in navigation. Shall this condition be continued? In the day of our weakness we were imposed upon. To continue our false policy is to impose upon ourselves. Our fathers broke their foreign yoke. Can we be worthy of them, and perpetuate our subordination? We are able at any time to break our fetters off and cast them away. We can build and sail shipping for ourselves and conduct our own commerce. We have not to beg permission of any nation that American ships may sail the ocean, nor have we to tax our people to buy our way into any commercial mart. We have only to provide by law that ships of our flag shall enjoy their right—the preference in carrying American commerce, and back up our law by the sentiment of the American people.

SHIP YARD NOTES.

The wooden ship building industry at Bath, Me., continues active. At the yard of William Rogers a four-masted schooner building for Capt. J. A. Slocum of New Bedford has sixteen frames up. At the Kelley-Spear Co.'s yard the Maine Central steamer launched in May is receiving finishing touches preparatory to going into commission. The four-masted schooner building for Charles H. Hirsch & Co. of New York is half planked, has her decks laid and is expected to be completed in about a month. The barge for Hudson Bros., Norfolk, Va., has been started. She will be 200 ft. ft. long, 36 ft. beam and 17 ft. 6 in. deep. The 2,000-ton four-masted schooner Robert H. Stevenson, building for Capt. J. E. Higbee of Boston is one-half framed and is expected to be completed in September. The keel is laid for a 225-ft. barge for the Baltimore & Boston Barge Co. The three-masted schooner for Capt. M. D. McKeown will be launched on Thursday of this week. The keel has been laid for the four-masted schooner building for Capt. C. A. Davis of Somerset, Mass. On the steamer Ransom B. Fuller the machinists and joiners are rapidly finishing their work and when completed the Eastern Steamship Co. will have a valuable addition to its fleet. At the yard of Arthur Sewall & Co., Bath, the large steel oil-carrying barge for the Standard Oil Co. is about two-thirds completed and is expected to be put overboard in about two months. The keel has been laid and a few frames placed in position on a five-masted steel schooner building for the Sewalls. At the Bath Iron Works the keel has been laid for the big steel oil barge building for the J. M. Guffey Petroleum Co. of Pittsburgh. On the battleship Georgia the work of framing is nearly completed. The work of plating has begun.

A New York dispatch says that there has rarely ever been a greater rush of work at the New York ship yards than at the present time. At the yard of the John N. Robins Co., Erie basin, the British Queen is being rebuilt. This steamer was almost totally destroyed in the Hoboken fire last spring, and after being sunk in Gowanus bay was floated and towed to her present berth. While her topsides, decks, 'tween decks, and in fact all but the bottom below the bilges were burned, it was decided to rebuild her and turn her into an oil carrier. She was purchased for a small sum by the Saginaw Steamship Co., which operates several vessels on the Pacific coast. The wrecked steamships Bellaggio of the Sloman line and the Indian of the Windsor line, are both in dry dock with a large force of men working on their bottoms. At the new ship yard, established by the McNeills at Crane's dry dock, Erie basin, the big steel ship Victor is being repaired, and will not be out of the dock for nearly a month. At the yard of the Morse Iron Works & Dry Dock Co. at the foot of Fifty-seventh street, there are said to be about 2,500 mechanics at work, chiefly engaged in transforming the four lake-built steamships, Northeastern, Northwestern, Northman and Northtown, into oil tanks for the Texas oil trade. When the proposed 16,000-ton battleship is started at the navy yard there will be an increased demand for ship builders, much of which will have to come from outside yards as the New York yards are as busy as they can be and some of them have eighteen months of work ahead. One effect of the present low dockage rates is that while these do not begin to pay the operating expenses of the dry docks, they are bringing a vast amount of repair work to New York from all over the Atlantic coast.

Mr. John W. Dickie will build a ferry in his new ship yard at Alameda Point, Cal., for the Sausalito ferry. The engines and boilers will be supplied by the Risdon Iron Works. The new ferry will be 251 ft. long, 38 ft. beam and will cost $200,000.

The United Engineering Works of San Francisco will build a steel steamer in its Oakland yard for Kerchoff & Cuzner of San Francisco. She will be christened San Gabriel and will be of the following dimensions: Length, 165 ft.; beam, 33 ft.; depth, 13 ft.

The Higgins Oil & Fuel Co. of Beaumont, Tex., is having two large oil-carrying barges built at the Weaver Ship Yard, Orange, Tex. One barge is 156 ft. over all, 31 ft. beam and 11 ft. depth of hold. The second barge measures 185 ft. over all, 33 ft. beam and 15 ft. depth of hold.

The government is slow in awarding medals for acts of heroism at sea, but not without reason for its thorough methods. Those who are deserving of medals under the law usually get them after all the government requirements have been complied with. The loss of the Lake Michigan Car Ferry Transportation Co.'s ferries 3 and 4 on Lake Erie in one of the severe storms of November last will be remembered by readers of the Review, who will also recall the rescue of the crews through the brave efforts of Capt. Frederick Johnson, who was in command of the tug Fisher, which had the barges in tow. Capt. Johnson, who resides in South Chicago, only recently received a medal which was due him from the treasury department. It is a little late now to talk of the loss of these ferries, but it would seem that all such craft should be fitted with steam towing machines and the strong wire cables that go with these machines. If we mistake not, the two larger car ferries of this fleet, Nos. 1 and 2, are fitted with Shaw & Spiegle towing machines, but the vessels that were lost were not so fitted.

President A. J. Cassatt of the Pennsylvania railroad system is authority for the statement that the Pennsylvania management will spend $100,000,000 in extensions and improvements within the next three years. This includes the tunnel under the North river from Jersey City into New York.

EXPLANATION OF DECREASED EXPORTS.

The drop of $105,000,000 in exports and increase of $79,000,000 in imports is not looked upon by the chief of the bureau of statistics as a cause for anxiety regarding the future of our foreign commerce.

"It was perfectly apparent when the result of the drought of 1901 became known," said Mr. Austin, "that our exports in 1902 must fall off, and the only surprise to me is that the loss was not greater. The corn crop, as is well known, is the chief reliance of our farmers for preparing for market the live stock of which we now export over $200,000,000 worth annually in the form of provisions and live animals. In addition to this, we have been exporting about $100,000,000 worth of the surplus corn and oats left over after feeding the live stock of the country. The great reduction of the corn crop by the drouth, of course, reduced to almost nothing the surplus corn that could be spared, and also caused the use at home of a much larger share of the oats, and so reduced the available surplus of that class of farm products. The result is that the exportation of corn fell from 177,000,000 bushels in the fiscal year 1901 to 27,000,000 bushels in the fiscal year just ended, and that of oats from 37,000,000 bushels to 9,000,000. The drop in the value of corn and corn meal and oats and oat meal exported is over $76,000,000. Fortunately the farmers learned quickly to economize their depleted corn supply and to substitute other materials for it, and therefore the reduction in exportation of provisions and live animals is only about $6,000,000."

"It also became apparent in the early part of the year," continued Mr. Austin, "that the value of cotton exports could not be expected to reach the phenomenally high figure of the preceding year. The export prices of cotton in 1901 were the highest that had been realized for many years, and as a result the total value of cotton exported in the fiscal year 1901 was greater than in any previous year in the history of our commerce, amounting to over $300,000,000 and forming more than one-fifth of the total value of the exports of that greatest year in our export trade. The average price of cotton exported in the fiscal year 1901 was nearly 9½ cents per pound, while the average export price in the fiscal year 1902 was 8¼ cents per pound. So it is not surprising that the value of the cotton exported in 1902 fell $24,000,000 below that of 1901, although the quantity exported was actually 160,000,000 lbs. greater in 1902 than in 1901."

"The third item of reduction in exports," continued Mr. Austin, "is in manufactures of iron and steel. The figures for the full fiscal year have not yet been received, but, judging from those of the eleven months which have been received, it seems probable that the reduction in iron and steel exports will be about $20,000,000. This reduction is due in part, it is believed, to the fact that German manufacturers found it necessary, by reason of the depressed conditions in that country last year, to unload their surplus stocks of iron and steel manufactures at greatly reduced prices, thus temporarily unsettling and reducing prices in foreign countries generally, while, on the other hand, the home demand in the United States for iron and steel manufactures has been larger than ever before, and in many cases beyond the capacity of our manufacturers to supply. The result of these two conditions was a reduction of about $20,000,000 in the exports and an increase of nearly $10,000,000 in the imports of iron and steel, and the total importations of iron and steel for the fiscal year just ended will probably exceed those of any other year since 1893."

"The increase in importations," said Mr. Austin, in conclusion, "is especially gratifying, in view of the fact that it shows a healthy condition in our manufacturing industries. While the figures of the year are not sufficiently completed to permit an analysis for the full twelve months, the fact that the analysis for the eleven months ending with May showed an increase of over $65,000,000 in manufacturers' materials is a sufficient explanation of the total increase of $79,000,000 of imports in the full year. Manufacturers' materials imported during the year will amount to about $420,000,000 in value, or 46 per cent. of the total importations. This is not only the largest importation of manufacturers' materials ever known, but they form a larger percentage than ever before of the grand total of imports, notwithstanding the fact that the total imports are the largest in the history of our commerce."

EXPEDITION OF THE RELIEF SHIP WINDWARD.

The Peary relief ship Windward has started on her expedition. The Windward since her arrival in New York three years ago has been completely changed and will go north as a full-powered, completely-equipped and thoroughly-commodious ship for Arctic work. The new engine is a steeple-compound, all parts being made exceptionally strong for work in the ice with every modern improvement and is expected to give a speed of from 7 to 8 knots. The Windward will coal at Sydney, C. B., and will proceed north through the straits of Belle Isle, touching at Godhaven, and possibly at Upernavik, and should, with all favorable circumstances, reach Peary's headquarters about Aug. 1. The Windward, a 320-ton bark, is easily the most interesting and historic of all the Arctic craft now afloat. Built at Sunderland, England, in 1865, she was for more than a quarter of a century employed in the Dundee and Peterhead whale fisheries. Purchased in 1894 by Alfred C. Harmsworth, she took the Jackson-Harmsworth expedition to Franz Joseph Land, being imprisoned in the ice near Cape Flora for the winter. Under command of Capt. John Bartlett, she sailed from New York for the north on July 3, 1898; parted company with her consort, the Hope, Capt. Samuel W. Bartlett, for Etah, North Greenland, on Aug. 12, and spent the following winter fast in the ice of Allman bay, breaking out early in August, 1899, and joining the Diana, the auxiliary ship, at Etah on Aug. 12, returning to Brigus, N. F. Extensive repairs were made to the hull and machinery early in the spring of 1900, and on July 20, commanded by Capt. Bartlett, she sailed from Sydney, with Mrs. Peary and her daughter, for the north. Except a report from Godhaven, on Aug. 15, nothing further was heard from her until the arrival of the Erik, the auxiliary ship of 1901, at Etah on Aug. 4. The Windward had spent the eight months from September to July fast in the ice of Payer harbor, near Cape Sabine, and spent a month, as soon as extricating herself, in a successful walrus hunt in Inglefield gulf. Returning at the end of the season practically under sail, for 3 knots, with favorable wind and tide, was the utmost that engines could do, the Windward wintered at Brigus, arriving in New York on March 26.

The Peary Arctic club is made up of subscribers secured by Mr. Peary just before his departure in 1898, and was organized in January, 1899. Peary's original idea was to associate twenty-five men who would pledge to him and to each other four annual contributions of $1,000 each, thus insuring a working capital for four years of his enterprise of $100,000. His departure was, however, compelled before the full number was secured, and the club as organized in January, 1899, was: President, Morris K. Jesup; vice-president, Dr. Frederick E. Hyde; treasurer, Henry W. Cannon, and secretary, Herbert L. Bridgman, who, with the late James M. Constable, Messrs. James J. Hill, E. C. Benedict, H. H. Benedict, H. Hayden Sands, E. W. Bliss and the late President Charles P. Daly of the American Geographical Society, were constituted founders. Mr. Jesup and Mr. Hill each contributed a double portion of the capital, and have generously renewed their full proportion for the present year. Messrs. Edward G. Wyckoff and Clarence F. Wyckoff of Ithaca, N. Y., and Grant B. Schley of New York, have also joined the club, and Frederick Constable since his father's death has completed and continued his subscription. The club sent north the Hope in 1898, the Diana in 1899, and the Erik in 1901, the second and last of which communicated with Mr. Peary, spending nearly a month at Inglefield gulf, and brought home complete journals and records, and a large amount of valuable material rescued by him from Fort Conger, and brought over 250 miles over the ice to Grinnell Land. Mrs. Peary goes north with the vessel, with the promise that her husband will return to this country on it, and never make another attempt to reach the pole.

COMMENTS ON THREE BATTLESHIPS.

Engineer of London thus comments on the representative war ships of three powers at the Spithead review: "The most remarkable thing about the Spithead fleet was the Russian battleship Pobieda, whose rig, by the way, has been altered since she was designed. She embodies a good many other minor improvements on the original design, and in the matter of novelty was far in advance, not only of our latest ships, but also of the German, French and American. She is not yet complete, the shields to the casemate guns being still absent; but she is fairly complete otherwise, and any of our engineer officers who saw her engine and boiler rooms must have wished themselves Russians. The Pobieda has a roomy and well ventilated engine room, everything can be 'got at,' and the same roominess distinguishes the boiler room. The boilers, it is interesting to note, run fore-and-aft instead of athwartship, as in our modern vessels. Each room is fitted with an armored stairway, running right up to the main deck at an angle of 55°, so the ship is unique in the matter of emergency exits. Viewed as a fighting machine generally, there was nothing equal to the Pobieda at Spithead, unless it were the American Illinois. The wide open decks, of which the Russians are so fond, are much in evidence in the Pobieda, 'shell-bursting gear' being almost entirely absent. The ship offers a huge target, quite half as much again as the considerably larger London; but the distribution of the numerous 12-pounders is so excellent that the big target may be thereby discounted.

"The Kaiser Friedrich III. is, if anything, a larger target still, and her innumerable gun muzzles show that her designer never troubled about 'interference.' She is an exceedingly smart ship—far more so than any of ours, which all looked rather squalid in comparison. Her grey paint is very pretty artistically; as a war-color it was by no means invisible, she being far more easily picked out than our multi-colored ships. One color is a mistake, save from the æsthetic standpoint. It silhouettes the ship too much, and can be 'invisible' only in certain lights. White is an error, because it is so obvious at night; but brown, grey, light grey, yellow, and blue may all with advantage be used on one single ship. The problem of the best color for making warships as hard to detect as possible can only be solved by scientific means, and by a full regard to atmospheric facts, such, for instance, as that yellow tells least in the sun, and blue least in the shadow and gloom. If colors be judiciously varied, some will always be invisible, whatever the atmospheric conditions, and at once the target is blurred and the eye of the gunner disconcerted.

"The United States battleship Illinois was conspicuous at Spithead for her small size in ratio to her displacement. Her coloring was as hideous as her form, but there was very little to find fault with in her. We observed that her after 6-in. guns do not train right aft as they might easily have done, and her big guns, the 13-in., seemed of an antiquated model, though the mounting is new enough and good in design. Everything is hydraulic or hand."

GRAND TRUNK ELEVATOR AT PORTLAND.

Last year the Grand Trunk railway began work at Portland, Me., upon a new grain elevator with a capacity for 1,500,000 bushels which was recently completed and is now in operation. This is the third elevator constructed at Portland by the Grand Trunk railway and the second structure of a well planned system for handling the largely increased export business of this road, which has come about through the development of the Canadian northwest. The first elevator of the Grand Trunk system at Portland was built in 1875 with a capacity of 175,000 bushels. In 1897 a 1,000,000-bushel elevator was built with a large conveyor system and it was thought adequate for a considerable period. But the demand for storage so increased that the third elevator became necessary. The latest elevator has complete modern equipment.

The Cunard steamship Campania, which arrived in Liverpool from New York on a recent trip, was in wireless communication with passing steamers practically from the time she left the United States until she was off the Irish coast, the communicating vessels including the Minneapolis on the 22d, the Lucania on the 25th, the Minnehaha on the evening of the same day, the Saxonia on the 26th, and the Irish coast on Friday afternoon.

During last month Scotch ship builders launched twenty-six vessels, of 47,896 tons gross, as compared with forty vessels, of 59,248 tons gross, in May, and twenty-nine vessels of 47,028 tons gross, in June last year. In the six months Scotch builders have launched 157 vessels, aggregating 259,804 tons gross, against 135 vessels, of 246,752 tons gross, in the corresponding period of last year, about 232,584 tons gross in 1900, and about 256,310 tons gross in 1899.

Sir Christopher Furness has purchased a controlling interest in the Gulf line of steamers.

AMERICAN COAL AND THE FRENCH MARKET.

Mr. George H. Jackson, counsel at La Rochelle, writing to the state department on the subject of American coal and the French market says:

The fact that much of the fuel used in France has to be imported, at an exceedingly high price, has led the French to make minute calculations of the relative value of the various combustibles they employ. In some localities, there is a strong conservatism which opposes the use of any product unknown in a practical way. The result is that our coal has been looked upon with more or less suspicion and many unfavorable prejudices have been created (1) by first appearances, due to the ignorance of our exporters as to the needs of the French market; (2) by analysis which, theoretically, showed a too small percentage of carbon and too much volatile matter, judging from experience with European coal. It has been found in practice, however, that to some degree appearances were deceptive and the theory incorrect, as shown by the opinions of seven persons as to the quality of American coal. These persons are either highly connected with railway lines or with large manufacturing concerns which have burned American coal. The first claimed that it was inferior in caloric force, as compared with newly mined South Wales coal; the second, that he found the combustion in the grates of his factory too rapid; the third, that the lumps fell to pieces when touched by the stoker (he admitted that his men may not have made the most of it, as they were not accustomed to such coal); the fourth declared that the coal was too friable; the fifth stated that for locomotives, other conditions being equal, there was no noticeable difference between the samples of American coal tried by him and the best Cardiff; the sixth was persuaded that this coal could easily replace the best Welsh; while the seventh person had learned that American fine coal was worth 10 per cent. more than Cardiff "menu," because it did not run to fine dust when broken, but consisted largely of particles the size of peas. The French classification of coal used here is as follows:

(1) "Tout venant" ("run of mine" or "through and through.") To the French purchaser, the signification is not the same as to the American seller; it means here coal that contains not more than 30 per cent. of fine.

(2) "Menu" (fine coal), which contains 30 per cent. of lumps. The rest consists of dust and particles small enough to pass through a mesh of 25 millimeters (0.98 in.)

American coal, on its arrival in France, has usually been so badly broken as to contain as high as 85 per cent. of fine. This places our coal on a par with Cardiff menu, so far as the proportion of lumps is concerned. The prices are determined by classification and quality. As the general opinion of the railroads is that the quality is of the best, there remains only the question of classification. One railroad officer writes me that "the price should not exceed at any time that of Cardiff coal, quality being equal." If our mine owners are content to sell their coals as menu in France, they can easily secure the market, but the buying price is low. One railroad official tells me that his company recently purchased 115,000 tons of menu at 15.50 francs ($2.99) the ton, delivered in cars alongside and duty—1.30 francs (25 cents)—paid by the sellers. These people could have paid 17 francs ($3.28) for American menu under the same conditions. Should our exporters wish to sell coal with 70 per cent. large they may be governed in price by the current value of best Cardiff. The following conditions will usually fulfill the requirement of any French railway contract:

Water	per cent..	1
Volatile matter:		
Minimum	do....	18
Maximum	do....	24
Ash	do....	9
Caloric force (minimum)	calories..	8,000

As to constancy, the coal should contain on delivery at destination not more than 30 per cent. menu, it being understood that all that passes through a sieve with holes 25 millimeters (0.98 in.) in diameter is menu.

Cardiff coal fulfilling the above conditions has recently been sold here, duty paid by the sellers, delivered on cars alongside, for 21.40 francs ($4.13) the ton of 2,205 lbs. The uses of bituminous coal in France should also serve as a guide to the American exporter. For domestic purposes, the coal should not be too friable, as the necessary handling produces much dust and consequent loss; neither should it be too bituminous, on account of the smell and smoke. For the manufacture of gas, the requirements are practically the same as in the United States, except, perhaps, that more stress is laid on the necessity for a large amount of coke. Large quantities of coal are consumed in factories in this part of France. Two important consumers say that under existing conditions American coal is worth 10 per cent. less than the best Cardiff. How far this deficiency in value may be due to grates adapted to burning a coal with greater per cent. of carbon and of a slower combustion than the American coal tried here, is a question which it may pay our exporters to investigate. In the ships that visit ports south of Havre, there seems to be very little difficulty in obtaining good results from our coal. This may be due in part to the construction of the furnaces and in part to the experience of the stokers in using various kinds of coal. The railways are the most important consumers. The three lines nearest La Rochelle burn nearly 700,000 tons per year. This immediate district receives 650,000 tons annually, of which 225,000 tons are burned on the railroads. I am led to believe that this proportion also holds for the ports of St. Nazaire and Nantes.

To meet the requirements of the French trade, the following suggestions are made: Can Americans procure cheaper transport? Should they not sift certain coals? Should they not improve the loading apparatus, so that the coal be not broken in putting it into the hold? Should they not use their coal dust to make briquettes, which sell here for from 27 to 32 francs ($5.21 to $6.17) per ton?

The Staples Coal Co., Taunton, Mass., has been obliged to put out of commission its ocean-going tug Cuba and also eight of its barges. Sixteen other barges have been placed in the ice business owing to the difficulty of obtaining coal.

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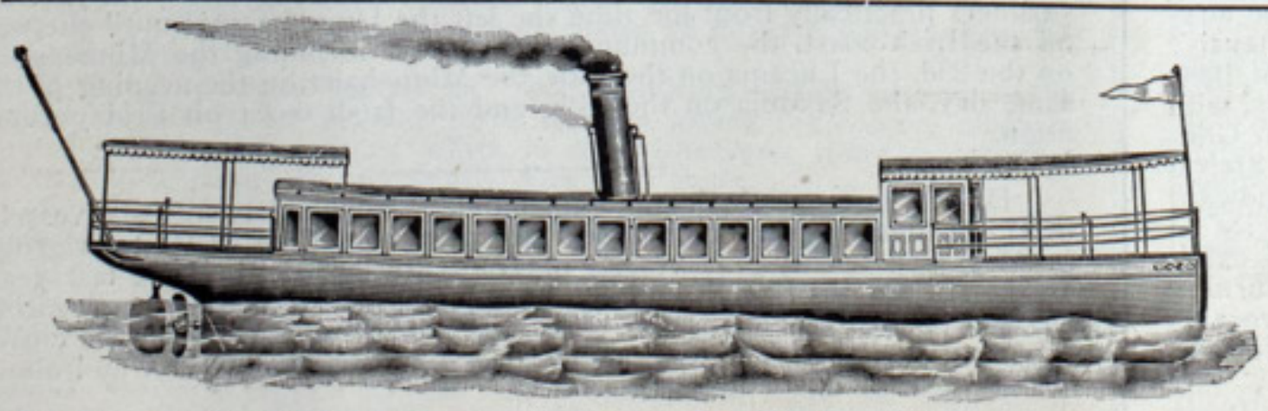

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Its statistics of waterborne commerce are thoroughly reliable. The section devoted to the commerce of the great lakes with its iron mines and their output, its coal trade and dock facilities, its grain trade and elevators, its ships and their owners, is very thorough and absolutely authentic.

The rear pages of the Blue Book are devoted to a BUYERS' DIRECTORY of the MARINE TRADE—that is a list of manufacturers of ship yard equipment and ship supplies, arranged under the titles of the articles which they make, for the benefit of the buyer, who is usually the ship builder or ship owner. By ordering a copy of the Blue Book in advance your name will be inserted in the Buyers' Directory under various headings suited to your business without extra charge. The price of the Blue Book is $5.

If you decide to advertise your output in the Blue Book your name will, of course, be inserted under the various headings of your business and you will receive a copy of the book free. The advertising rates are extremely low—full pages $75 and $100, and half pages $40 and $55, according to location.

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"PRESERVO" WILL NOT CRACK, SCALE, FREEZE OR STICK—SEE PAGE 8.

TRADE NOTES.

The Lunkenheimer Co. has recently purchased a large number of Westinghouse induction motors for the equipment of its new works at Cincinnati.

The C. W. Hunt Co., West New Brighton, Staten Island, N. Y., has just issued a series of mailing cards devoted to its "Stevedore" transmission rope. The company claims that it will do more work in proportion to its cost than any other rope in the market.

Mr. W. R. Baldwin has recently been appointed special agent by the Ashton Valve Co., of Boston, for their line of pop safety valves, steam gages, etc., among the marine and stationary trade, his office being located in the Union Trust Co.'s building, Baltimore.

Under the title "Mott's Marine Plumbing" the J. L. Mott Iron Works, No. 84-90 Beekman street, New York, has issued a beautiful catalogue. We have rarely seen better workmanship in any catalogue. Abundant space is given to each illustration which is usually a half tone carefully outlined and vignetted. Some of the illustrations of porcelain lavatories are exquisitely done. The catalogue is lettered Y and is substantially bound in heavy paper.

Mr. A. Carlsen, chief engineer of the steamer Santuit, enthusiastically commends "Smooth-on" compound for leaky boilers. "We all have to use a cement of this kind occasionally," he says, "and I am sure that in my experience of thirty years on ships of several nations I have never found anything to equal 'Smooth-on.' Any engineer who will give it a fair trial will get good results from its use." The Smooth-On Mnfg. Co., 547-549 Communipaw avenue, Jersey City, N. J., will send free upon application a sixty-page illustrated book telling about the different "Smooth-on" cements and their uses.

Joseph Allen of Collingwood, N. J., evidently has a specialty in his packing for condenser tubes that bears out the claims he makes for it. "Compared with lacing," he says, "these packings are as electric light to a tallow candle; the day of packing a condenser with lacing has gone by with those who have tried this packing; if directions are followed the saving in time, labor and money is enormous." The packings are being ordered by the thousand by the best known concerns in shipping and ship building lines throughout the United States. Among names appearing in a list of those who have used and are recommending the packing are the following: John W. Collins, chief engineer, United States revenue cutter service; James S. Doran, superintending engineer, American line; New York Ship Building Co., Camden, N. J.; International Pump Co., Brooklyn, N. Y.; Henry R. Worthington, New York city; Graham & Morton line, Benton Harbor, Mich.; Jenks Ship Building Co., Port Huron, Mich.; W. & A. Fletcher Co., Hoboken, N. J.; Craig Ship Building Co., Toledo, O.; Dodwell & Co., steamship agents, Tacoma, Wash.; M. T. Davidson, steam pumps, condensers, etc., Brooklyn, N. Y.

Lumber Barge For Sale.

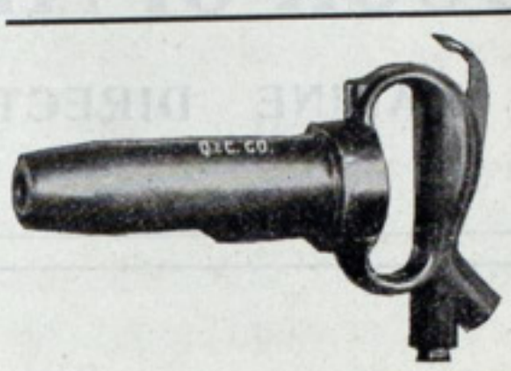
Capacity 350,000 lumber; rates B1. Will sell cheap or exchange for lumber. Address P. O. Box 48, Sandusky, Ohio. Aug. 15

For Sale.

Cabin gasoline launch, 40 ft., 16 H.P.; almost new, excellent condition, and fully equipped. Geo. L. Fleitz, Detroit, Mich. July 17

Proposals for Dredging: U. S. Engineer Office, No. 185 Euclid Ave., Cleveland, Ohio, July 15th, 1902. Sealed proposals for dredging the channel between the Lake Shore Ry. bridge and the main entrance to Cleveland Harbor, Ohio, will be received at this office until 2 p. m., August 15th, 1902, and then publicly opened. Specifications, blank forms and all available information will be furnished on application to this office. MAJOR DAN C. KINGMAN, Corps of Engineers, U. S. A. Aug. 7

Proposals for Dredging: U. S. Engineer Office, No. 185 Euclid Ave., Cleveland, Ohio, July 14th, 1902. Sealed proposals for improving Sandusky Harbor, Ohio, by dredging, will be received at this office until 2 p. m., August 14th, 1902, and then publicly opened. Specifications, blank forms and all available information will be furnished on application to this office. MAJOR DAN C. KINGMAN, Corps of Engineers, U. S. A. Aug 7



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Year.	Australien	Polynésien	Armand Béhic	Ville de la Ciotat	Ernest Simons	Chili	Cordillère	Laos	Indus	Tonkin	Annam	Atlantique
1890	67,728	2,460										
1891	68,247	68,331	204									
1892	68,247	68,403	69,822	23,259								
1893	68,379	68,343	68,286	68,247								
1894	68,439	68,367	68.574	68,439	37,701							
1895	68,673	68,766	68,739	68,808	40,887	28,713						
1896	69,534	92,718	69,696	69,549	62,205	63,153	40,716					
1897	68,250	69,606	92,736	69,555	62,235	76,110	63,357	43,146				
1898	70,938	69,534	69,552	69,597	62,526	63,240	63,240	62,553	63,954	22,707		
1899	69,534	69,615	67,431	90,405	60,246	62,778	62,868	52,344	54,855	44,007	22,884	
1900	69,534	67,494	69,744	69,564	61,719	62,382	62,502	51,471	53,373	62.016	63,066	52,140
1901	44,220	69,627	69,594	66,948	51,057	62,460	62,490	61,743	62,688	43,866	62,466	63,126
Total	801,723	783,264	714,378	664,371	438,576	418,836	355,173	271,257	234,870	172,596	148,416	115,266

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